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FRANK P. FOSTER, M. D.

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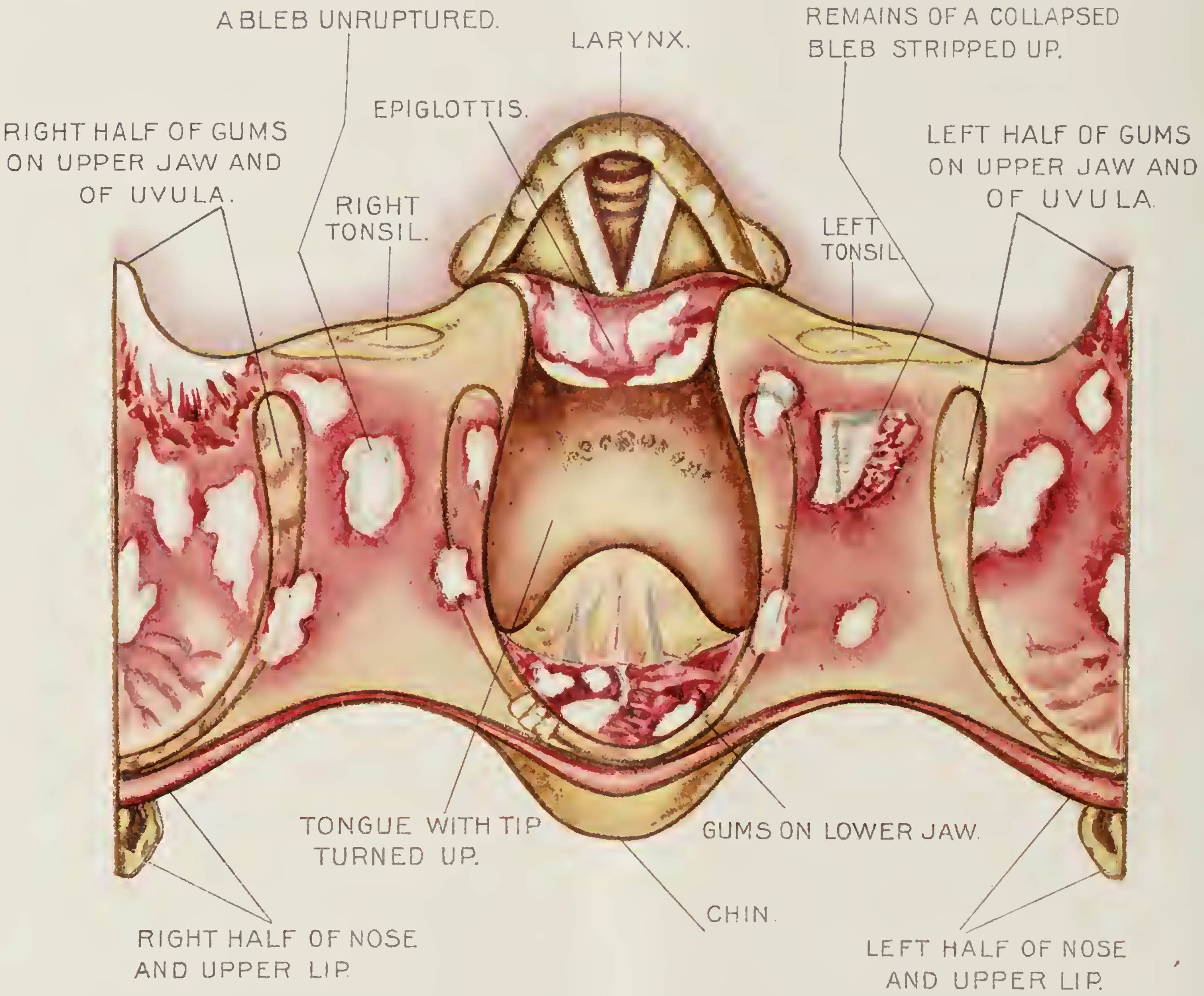
A BLEB UNRUPTURED.
LARYNX.
REMAINS OF A COLLAPSED BLEB STRIPPED UP.
EPIGLOTTIS.
RIGHT HALF OF GUMS ON UPPER JAW AND OF UVULA.
LEFT HALF OF GUMS ON UPPER JAW AND OF UVULA.
RIGHT TONSIL.
LEFT TONSIL.
TONGUE WITH TIP TURNED UP.
GUMS ON LOWER JAW.
CHIN.
RIGHT HALF OF NOSE AND UPPER LIP.
LEFT HALF OF NOSE AND UPPER LIP.

DR. L. H. MILLER'S CASE OF PEMPHIGUS CHRONICUS VULGARIS.

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Original Communications.

PEMPHIGUS CHRONICUS VULGARIS OF THE MOUTH AND EPIGLOTTIS.

By LEWIS H. MILLER, A. M., M. D.,
BROOKLYN,
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TO THE LONG ISLAND COLLEGE HOSPITAL DISPENSARY;
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MANHATTAN EYE AND EAR HOSPITAL, NEW YORK;
FELLOW OF
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Pemphigus, whether it be of the benign or of the more malignant variety, is a rare disease, and is so considered even by the most eminent dermatologists.

The case I here report would seem worthy of publication from the fact that the first appearance of the eruption and its persistent manifestation in unusual localities and in a rather non-characteristic form made it an extremely difficult one for diagnosis.

Pemphigus Chronicus Vulgaris, affecting for over Twenty Months only the Mucous Membrane lining the Oral Cavity and covering the Epiglottis.—James W., married, aged seventy-two years; born in London; has lived in the United States forty-eight years; occupation, salesman.

During the past fifty years he has suffered from time to time with acute, subacute, and chronic rheumatism. In 1884 and in 1894 there were heart complications from the same disease. In 1889 he had a fatty tumor removed from each shoulder. In 1892 he had an attack of purpura hæmorrhagica, affecting principally the left foot.

There was no history of syphilis, and physical examination revealed no sign that he had ever had that disease.

I first saw him at my clinic, Long Island College Hospital, November 15, 1895, when he complained of some soreness in the roof of his mouth. He said that about one month previous he first noticed slight soreness on the inner side of the right cheek, close to the upper jaw, and located the point about opposite the second molar tooth. On examination, I found on the roof of his mouth, close to that tooth, and at about the centre of the roof, patches of what appeared to be false membrane, which could be stripped off readily, and left a raw, bleeding surface. Further examination revealed the same kind of patches on the epiglottis.

These apparently false membranes were of an opaque milky appearance, of considerable thickness, which put them in sharp contrast to the familiar "mucous patch." In fact, the picture was an entirely new one to me, and I was at a loss for a diagnosis. I sought aid from my colleagues, and the patient was shown at a meeting of the Brooklyn Dermatological and Genito-urinary Society, but no diagnosis was made; it was there suggested, however, that the lesion was probably due to leptothrix. This I questioned, first, because of the appearance of the patches; and second, because the parts usually attacked by mycosis were not involved at all.

It did appear, however, from the history that these patches started close to decayed teeth which were no longer of any use. I therefore ordered them extracted, after which there were none left in the upper and only three in the lower jaw, and these were in good condition.

This had no effect on the progress of the disease, which, in spite of the antiseptic and other local treatment, spread in patches over the roof of the mouth, the soft palate, the mucous membrane lining the cheeks, covering the lower jaw, and extending under the tongue, which surfaces, with that of the epiglottis, are the only ones that to my knowledge have been involved in this case, until quite recently one or two small blebs appeared on the posterior wall of the pharynx and one large bleb on the lining of the trachea an inch below the right vocal cord.

In the plate I have attempted to show diagrammatically nearly all of the parts attacked by the disease, as though the superior maxilla had been divided in the median line and one half laid over on either side, putting the lips, the tissues of both cheeks, and the pillars of the soft palate on the stretch. Thus I represent the tip of the nose, the roof of the mouth, soft palate, and uvula in halves on either side, showing the entire inner surface of both cheeks, the tongue with its tip turned up, and the larynx as in the act of inspiration.

The disease, as represented in the cut, is decidedly characteristic of it as I have seen it many times in this case. Not, perhaps, at any one time have there been as many of the blebs as here represented, but at different times, a fresh crop appearing first in one place and then in another, especially where evoked by any irritation.

Microscopic examinations of the "membranes" were made, and cultures taken with entirely negative results as to diagnosis, but, as I have since learned, the findings were practically the same as those recorded by Mandelstamm (1) and Deutschmann (2) in 1891.

After showing this case to a large number of laryngologists, none of whom offered a positive diagnosis, but a majority of whom were inclined to think it must be one of those unusual forms of manifestation of tertiary syphilis, I put my patient on the use of a saturated solution of potassium iodide, and later on the "mixed treatment." This was still contrary to my own opinion as to diagnosis, yet I had tried for more than four months many kinds of local treatment, and thought it but right to give the patient the benefit of what seemed to be the opinion of so many of those who had had an extensive experience in throat and nose cases. It was in March, 1896, that I began the antisyphilitic treatment, and continued it for two months with no benefit to my patient, so I abandoned it.

In June I showed the patient for diagnosis at the American Laryngological, Rhinological, and Otological Society meeting at the Academy of Medicine, New York, where leading throat and nose specialists from Denver to Boston saw him, yet none of them recognized the condition as a disease with which they had ever met, and no satisfactory diagnosis was made.

During the autumn months the bleb appearance at the beginning of the formation of these "patches" was more marked, looking, at first, like bullæ, varying in size from that of the head of a pin to the diameter of a twenty-five-cent piece, translucent, filled with a fluid resembling the white of an egg slightly tinged with blood. Then a light hazy appearance began to show, and soon they decidedly resembled the thicker part of an oyster, and within twenty-four hours from the time they started they would rupture and settle down to resemble the so-called "false membrane," as first described.

The bleeding surfaces left after stripping off these

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patches soon became covered with the same or a very similar coating. A few times when I removed one from the inner side of the cheek the entire epithelial lining of that side of the mouth came off with it, leaving a large raw surface, which would also become covered all over with the white coating in less than twenty-four hours.

In November I took the patient to Dr. Jonathan Wright's office for consultation. He, too, had not seen a like condition before, but on consultation of a German work (3), with excellent colored illustrations of different lesions of the larynx and oral cavity, the diagnosis of pemphigus was made. This to me has proved quite satisfactory. I have, however, been unable to find a single case reported in the English language where this disease began on the mucous membranes.

Dr. Gleitsmann, of New York, cites a case which he saw, and it was reported (4), at his request, by Dr. H. C. Klotz, but, according to that report, the disease first appeared on the chest.

In the German and French languages there are a number of cases similar to my own reported, but of these there were only a very few in which the oral lesions persisted so long before the disease appeared on the integument.

Heryng reports (5) six cases which resembled mine very closely, yet in none of them was it over six months after the disease showed itself in the mouth before it appeared on the integument, and in some of them it was only four.

Chiari reviews (6) the literature and reports a case. He says "it may occur on the mucous membranes as blebs or as epithelial thickening. It is easy," he remarks, "to distinguish it from aphthæ, stomatitis, tuberculosis, and syphilis; harder from herpes."

"Prognosis always doubtful, usually bad."

Dr. Mandelstamm discusses (7) the subject of pemphigus, and describes a case quite similar to mine, as regards the character and location of its manifestation.

Bayer records (8) a case of pemphigus affecting the lips of an hysterical woman that had lasted for two years.

Sachsalber reports (9) a case first affecting the uvula, soft palate, and post-pharyngeal wall in a woman sixty-three years old.

Seifert publishes (10) a case of pemphigus of the pharynx in a woman aged forty-one years lasting for seven years, with no skin eruption, and he quotes Zwillinger, Newman, Parjesz, Heber, and Bollet as saying that the nasal mucosa is occasionally affected by this disease.

Mosler reports (11) a case of chronic malignant pemphigus. It appeared intensely upon the mouth and pharynx several years before it occurred on the skin. He gives a photograph of the extensive involvement of the skin which caused death.

Fuchs describes (12) a case of pemphigus which existed eleven years in the mouth before occurring on the skin.

There are some twelve other reports of cases recorded (13–24) by German and French writers, but in a large majority of them the blebs appeared on the skin in less than a year after starting on the mucosa of mouth, throat, or nose.

As to the pathology of pemphigus, practically nothing is known. It has been advanced that it is due to a spinal-cord lesion; but the truth of this theory has not been satisfactorily demonstrated, and it is discredited.

Kaposi made nine post-mortem examinations of persons who had died from pemphigus, and found changes in the spinal cord of only one of them, and that was a sclerosis.

DuMesnil (25), after an exhaustive study of a few cases of pemphigus vulgaris, thinks it has its origin in some functional disorder of the nervous system.

My patient suffers principally from soreness in the mouth and the inability to take solid food. As soon as he attempts to masticate any solid food whatever it causes a fresh crop of blebs, thus greatly increasing the soreness. No fœtor or salivation has occurred. As a result of my experience in treating this case locally, previous to a diagnosis, I have abandoned all topical applications, and am prescribing iron, arsenic, and strychnine, increasing the dose of arsenic as far as the patient will bear it. At present there seems to be an improvement, but I am not confident that it will be permanent.

I am indebted to Dr. Jonathan Wright for many of the references, translated from the original, in the publication of this article.

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14 SPENCER PLACE.

SOME CRITICAL AND DESULTORY REMARKS
ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By JONATHAN WRIGHT, M. D.,
BROOKLYN.

(*Sixth Paper.*)

The fact that many people with normal upper respiratory passages are found to have in the secretions of these cavities the diphtheria bacillus of Loeffler is one of a series of observations which is slowly tending to modify our earlier conceptions of the relative importance of bacterial influences in the ætiology of diseases with which they are associated. Several years ago the subject of fibrinous rhinitis was extensively discussed in its relation to the diphtheria bacillus and to clinical diphtheria. At first it was supposed that the micro-organism was not present in this comparatively benign affection, but later observations show that in spite of the difference in the clinical histories of these cases from those of diphtheria of the nose the bacillus is found in over half of them. Recently several articles have appeared which carry us a little further. Meyer * has lately reported to the Berlin Laryngological Society that he has found in a membrane produced by the galvano-cautery very virulent diphtheria bacilli. Out of twenty-two cases of fibrinous rhinitis examined, virulent bacilli of diphtheria were found thirteen times, streptococci and staphylococci nine times.

Vansant † reports the results of a number of bacteriological examinations made of the nasal mucus of patients with various intranasal lesions: "The examination embraced a hundred and thirteen cultures of specimens taken from a hundred different patients. It showed the presence of the diphtheria bacillus in no less than thirty of the cultures examined, these cultures representing the discharges found in twenty-six different patients.

For each disease examined, the number of cases with diphtheria bacilli was as follows:

Eleven of twenty-five cases of atrophic rhinitis; three of sixteen cases of chronic purulent rhinitis; five of fourteen cases of rhinitis; three of seven cases of nasal syphilis; one of four cases of acute rhinitis; three of thirty-one cases of hypertrophic rhinitis; none in two cases of disease of the accessory sinuses; none in the one case of fibrinous rhinitis.

Possibly the author may "have mistaken the false for the true diphtheria bacillus."

Pluder ‡ gives perhaps the best review of fibrinous rhinitis which has been published lately, reporting six cases, the membrane in five of which was examined microscopically and found to contain the Loeffler bacillus. He is of the opinion that fibrinous rhinitis is a mild form of nasal diphtheria. The difficulty of classifying disease by ætiology is here illustrated. If we may have a fibrinous inflammation of the mucous membranes without the Loeffler bacillus, which I believe no one denies; if we may have the Loeffler bacillus on mucous membranes without diphtheria, which has been repeatedly demonstrated, since we have all degrees of severity of diphtheritic inflammation with the bacilli, which is a common observation, since we find virulent bacilli in mild cases of diphtheria, it certainly is a little difficult for the ordinary mind to regard the Loeffler bacillus as the most important factor in the ætiology of diphtheria. Apparently the most important factor in the ætiology is a systemic or intrinsic one. The great success of antitoxine in the therapy of diphtheria would suggest that a person has diphtheria because he is temporarily deprived of the antitoxine power of his own tissues. We may perhaps be allowed to conjecture that this is applicable to all diseases associated with the presence of bacteria. This is an old contention and scarcely worth detailing to this length were it not for the fact that even yet it is lost sight of far too frequently. It applies quite as closely to the question of the ætiology of sepsis and tuberculosis and pneumonia, except that we have not as yet the corroborative proof furnished by the extrasystemic manufacture of their antitoxines. It is not reasonable to suppose that Nature works in such a bungling way as to keep stored up in her magazines a separate antitoxine for every morbific germ. This is not according to what we are accustomed to find out about the economy of Nature. Any further speculation in regard to this point would be only vague surmise as yet.

Vedova, who a year or two ago, with Belfanti, reported the treatment of a number of cases of ozænic atrophic rhinitis with diphtheria antitoxine, because they found pretty constantly in the secretions the false diphtheria bacillus, contributes a paper to the *Archivio italiano di otologia* (anno v, 1897) Upon the Differential Diagnosis between Chronic Rhinitis and Ozæna, in which he says: "I have studied bacteriologically a hundred and twenty cases of ozæna which I could collect from nearly all the dispensaries of our specialty in Milan. From the aggregate of this bacteriological study I am able to make the following assertions:

"1. The false (*simildifterico*) diphtheria bacillus is always present in cases of ozæna.

"2. In certain forms of ozæna the false diphtheria bacillus is alone, or almost so, and in such abundance and prevalence over other micro-organisms which may be present in the ozænatous crusts as to render very easy its isolation in characteristic colonies.

"3. In other forms the false diphtheria bacillus is accompanied by the *Bacillus mucosus* (Löwenberg-Abel), which is united with it in scanty proportions.

"4. In other forms the false diphtheria bacillus is very scanty and the *Bacillus mucosus* prevails to a marked degree, so much so as to render impossible the isolation of the former."

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* *Rev. hebd. de laryng.*, No. 7, p. 193, 1896.

† *Am. Medico-surgical Bulletin*, March 25, 1897.

‡ *Deutsche med. Woch.*, Nos. 44 and 46, 1896.

In conclusion, he says:

"All the above considerations and deductions made in the scientific and clinical field of rhinology lead to the following opinions and assertions:

"(*a*) The false diphtheria bacillus is a direct cause of chronic fœtid atrophic rhinitis, which, however, may also be due to other causes, at present unknown, and assume different clinical characteristics which may be confused with the rhinitis studied by us.

"(*b*) In the diagnostic field chronic fœtid atrophic rhinitis is differentiated by bacteriological examination, and by its not reacting in any beneficial manner to methods of treatment thus far employed.

"(*c*) The antiozænatous serotherapy is specific for chronic fœtid atrophic rhinitis due to the false diphtheria bacillus, and therefore, provided that it is applied in cases not far advanced and complicated by multiple infections and inflammations of the accessory sinuses, we may reasonably expect good results not attainable by other methods of treatment."

It is impossible to judge of the merits of this method of treatment of ozæna, but whatever they may be, we see here the tendency of the human mind to grasp at new and mysterious remedies on insufficient evidence of their efficacy, with a faith unshaken by considerations that should occur to every one. In the first place, it has not been proved that the false diphtheria bacillus has any other than a morphological and biological *resemblance* to the true bacillus, producing so far as we know no toxic effects, and therefore it can not be expected to react to the antitoxine produced by the toxine of the true bacillus. In the second place, the proof adduced of the ætiological relation of the bacillus to ozæna is shadowy and insufficient. In the third place, a specific for ozæna should cure the far-advanced cases as well as the incipient ones, since Nature at middle life seems to cure the most of them without trouble. It is not a mortal disease, and therefore can not be classed with cases of diphtheria and phthisis pulmonalis, so far as the argument goes of failures in treatment being due to "not seeing them early enough."

If ozæna is of bacillary origin we must look for the organism in the tissues. The idea of toxines saturating the mucous membrane, but engendered by the bacteria in the secretions, may occur to us, but we are far from any proof of such a hypothesis.

Lautmann * has reported the treatment of a number of cases by antitoxine and seems to regard the method as having a hopeful future, but an analysis of his cases would hardly seem to bear out his favorable view of the matter. He had several unpleasant instances of the occasional after-effects of the injection of diphtheria antitoxine. He seems to regard atrophic rhinitis as having in its ætiology an element of trophoneurosis.

Aronsohn, in the *Archiv für Laryngologie und Rhinologie* (Bd. v, p. 210), contributes a paper to the much-debated question of primary tuberculosis of the larynx. He urges its frequency, and cites histories of several cases in support of his contention. He severely criticises those who doubt its occurrence and those who deny its frequency. So far as I have been able to gather from literature, there are very few who deny the possibility of its occurrence. Indeed, this assertion would be unwarranted, for the author quotes three cases in his tables—those of Orth, Pogrebinski, and Demme—in each of which tuberculosis was found in the larynx on autopsy and not in the lungs. His tables contain twenty-nine cases—the three above mentioned, seven in which autopsy showed tuberculosis of the larynx and of the lungs, but in which he considered the laryngeal lesion the primary one. The reports of nineteen other cases included no post-mortem examinations, but were cases in which the diagnosis was entirely dependent upon the clinical history and the physical signs. This, of course, is a very unsatisfactory sort of evidence, and a strict criticism must exclude all but the cases in which the lesion was found on autopsy in the larynx and not in the lungs. Since, even in cases that die of pulmonary phthisis, a laryngeal lesion is only found once in ten to thirty cases, this is not an unreasonable criticism, but, on the other hand, very rarely does an opportunity occur to make an autopsy in a case of tubercular laryngitis in its early stages, the only period at which we should expect to find the lungs free. The matter may be summed up in a few words. No one can deny the rare occurrence of primary laryngeal tuberculosis. No one can prove its frequency.

In connection with this subject the paper of Massei, in the *Archivio italiano di otologia* (anno v, 1897), upon the diagnosis of laryngeal tuberculosis may be read with profit. He thinks that slight and sometimes primary forms of laryngeal tuberculosis are frequently not recognized by even the experienced laryngologist. They may be taken for cases of simple catarrhal inflammation, obstinate in its course. Exclusion of syphilis by the results of specific treatment is always necessary. He urges also the advisability in some cases of removing pieces by curettement for microscopic examination, or even the intraperitoneal inoculation of susceptible animals. I doubt if this mistake in diagnosis on the part of the experienced laryngologist is of very frequent occurrence, but he points to the very evident fact that if we are to attain good results from any method of local treatment it is in these incipient cases. Massei maintains his skepticism as to the efficacy of any form of local surgical treatment in the vast majority of cases, in which I confess I am in accord with him. Skepticism in the therapy of any desperate disease is an ungracious and unpopular attitude of mind, but keeping the truth of facts constantly before us will frequently save us from many dangerous and misleading illusions, however eager we may be to entertain them from an ardent desire to benefit suffering humanity. The surgical treatment of laryngeal tuberculosis is thus referred to by the distinguished Italian laryngologist:

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* *Annales des maladies de l'oreille*, etc., March, 1897.

"But this skepticism, which was opposed by me and by others to the enthusiasm of the brave pioneers who held aloft the banner of surgical therapy, is not an unreasoning opposition to this humanitarian cause; on the contrary, it has served to put us all in accord as to the limits within which local treatment is possible, and as to the criteria which should govern the indications for it."

In these reviews I have repeatedly deprecated enthusiastic claims as to the results of many forms of local treatment of laryngeal tuberculosis. Unfortunately, we can not in medicine, for obvious reasons, always follow Pestalozzi's famous maxim of "Try all things." We are only justified in trying those things against which our reason does not revolt. Tuberculosis at first may be a local disease, but when it comes under observation for treatment it is, as a rule, a general affection. We know that climatic treatment is the most successful. It is so because it apparently produces in the patient's system a tuberculosis antitoxine. When man learns to manufacture that antitoxine we shall have reached the beginning of tuberculosis therapy—it may be Maragliano's serum, or it may be Koch's tuberculin, or it may be something else—but bacteriology, if it has taught us nothing else, certainly should lead us to expect nothing radical from the knife or from drugs. It can not be denied that the surgical treatment of the tuberculous larynx has much in it to recommend it to us, as indicated for the relief of certain symptoms, such as obstruction and pain. To excise inflamed tissue removes the source of much irritation and the terminal filaments of sensitive nerves involved in the process, but is it possible for any one to believe that it removes the tubercle bacillus or renders the pabulum on which it thrives in the tissues unfit for its further development?

The question of tuberculous infection of lymphoid tissue in the fauces and the nasopharynx continues to excite considerable interest abroad. Its interest should not be limited to the narrow domain of laryngology, but the significance of recent observations should be appreciated in the broader field of hygiene and of systemic immunity. The somewhat extreme tendency of regarding the occurrence of tubercle or of the tubercle bacillus in the hypertrophied faucial and pharyngeal tonsil as frequent, and of immediate serious import to the patient when it is found, has not been supported by the later reports on the subject, because in the vast majority of cases it has been impossible to trace the outbreak of any systemic or pulmonary lesion to it. I have gone into the subject more extensively in a recent article in this journal, and have only to add here that it seems, from the evidence thus far presented, probable that the cases which end in disseminated and fatal phthisis do not have their origin in the lymphoid structures. Although tuberculosis may be first observed there in rare cases, it seems probable that the primary lesion has really been elsewhere, and usually in the lower respiratory tract. Since the lymphoid tissue in the nose and throat is undeniably more exposed to infection from the air and food than are the pulmonary tubes, we are driven to the conclusion that there exists in the lymphoid elements of the respiratory mucous membrane a resisting power to the *Bacillus tuberculosis* far in excess of that offered by the pulmonary tissues, or we must conclude that the road of infection is by the way of the lymph- or blood-vessels of the intestinal tract in cases of phthisis pulmonalis.

Mouret,* in a case suffering from similar lesions of the larynx and lungs, found tubercular tissue in the tonsils. Out of eighteen cases, Ruge † found tubercular tonsils in six. Of these, five had well-marked pulmonary tuberculosis and presented every evidence that the pulmonary lesion was the primary one. The remaining one had large tonsils and subsequently cervical spondylitis, which was evidently tuberculous. The tonsils were then removed and found to be tubercular. Ruge thought the tonsillar lesion was the primary one. This it seems to me was not at all warranted by the facts as narrated by the author. None of these cases, I imagine, are to be considered as surely primary in the lymphoid tissue, but probably were secondary to other lesions. This secondary infection has long been recognized as of frequent occurrence. The chief interest at present is centred around the lymph tissue of the throat as the port of entry for the bacillus, where, establishing colonies, it may send forth by the lymphatic and blood estuaries emigrants to the lungs or elsewhere. In regard to this subject, no paper which has appeared in the last year or two in laryngological literature so well deserves careful reading and consideration as the one contributed to the *Archiv für Laryngologie* (Bd. iv, Hft. 3) on Primary Latent Tuberculosis of the Hyperplasia of the Pharyngeal Tonsil by Pluder and Fischer. They review the literature of the subject, and give from it the following significant table of positive results obtained by others in examining the lymphoid tissue in this locality for evidences of tuberculous infection, together with their own results: Lermoyez, in thirty-two cases, twice; Gottstein, in thirty-three cases, four times; Brindel, in sixty-four cases, eight times; Pluder and Fischer, in thirty-two cases, five times.

The criticism of Cornil, that the tubercle bacilli may exist on the surface and in the crypts of tonsils and adenoids, weakens the force of the positive results attained through animal inoculation by Dieulafoy and others, but in all the cases referred to above actual demonstration of tubercle by the microscope was noted. It will not be thought hypercritical, by those who know most of the subject, to suggest that the diagnosis of anatomical tubercle in lymphoid structure is not always a perfectly easy matter with the microscope, and so, perhaps, it would be well only to include those cases in which the microscope identifies the bacillus in the tissues as entirely free from criticism. This is almost always a laborious and difficult task. Pluder and Fischer found it in their cases. I have looked for it in a large number of cases, but have never found it, except in Dr. Chappell's case, where the diagnosis was clear from the clinical history and from gross appearances.* It can not be too strongly urged, however, that these negative results do not militate against the positive observations made by others.

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* *Revue hebd. de laryng.*, No. 44, 1896.

† Virchow's *Archiv*, No. 144, Hft. 3.

The peculiar value of the work of Pluder and Fischer lies in the exceedingly common-sense view they take of their own important observations and in their shrewd criticism of the works of others.

Dr. Paul Manasse, in Virchow's *Archiv* (Bd. cxlvii, Hft. 1), speaks of the occurrence of giant cells in syphilitic growths of the nose. The significance of giant cells in chronic inflammation has been the subject of considerable discussion. A case came under my observation some time ago in which a diagnosis of malignant disease of the tongue had been made and a piece excised for microscopic examination. It contained a large number of giant cells in a tissue of low inflammatory origin. The microscopic diagnosis was tuberculosis. A section of the growth was shown me and I agreed with this opinion. On seeing the case itself afterward, however, so characteristic were the clinical history and the appearances that, in spite of the microscopical evidence, which had been pronounced by a skilled pathologist as well as by myself as tuberculous, I had no hesitation in stating my conviction that the affection was of a syphilitic nature. The result of treatment subsequently proved the correctness of this view. I have lately had under observation a case of growth in the larynx of a somewhat peculiar appearance causing marked dyspnœa. Although the growth was supposed to be tuberculous, possibly lupus, the patient was sent into the hospital and put upon vigorous antisyphilitic treatment. There was very marked improvement from the first, but in the meanwhile slight physical signs of pulmonary trouble had been found in the chest, and a few tubercle bacilli were found in the sputum. The laryngeal lesion, however, has steadily improved, but has not entirely disappeared. Otherwise the case is rapidly running the ordinary course of pulmonary phthisis. I know that this will be thought an instance of mixed infection. There is no syphilitic history. The patient is a girl eighteen years old, and if there is a syphilitic element it is in all probability an hereditary one.

In these two instances we have examples of how even the most reliable of diagnostic resources may fail us. Manasse's paper contains a warning that a microscopic examination of such tissue without a demonstration of the tubercle bacillus leaves the diagnostician in some doubt, and this doubt can only be resolved by the administration of the iodide of potassium. As I have intimated, even this means is not always satisfactory. It takes considerable experience with syphilitic and other infiltrating disease of the nose and throat to form a correct opinion as to how much absorption to expect from the use of the iodide in syphilitic disease and how much we frequently get in other infiltrations. A week's time is often not sufficient for this differentiation. After that time, however, we do not expect a cancer or a sarcoma or a tuberculoma to continue to recede; but in the laryngeal case I have mentioned the improvement was of much longer duration, although evidently tubercular. Manasse is of the opinion that the giant cells in syphilis arise from the capillary veins by the agglutination of protoplasm holding in its substance nuclei derived from the endothelium and probably from the white blood-cells.

Moure * reports two cases of empyema of the maxillary sinus in infants three weeks old, due to the premature eruption of a tooth. One was a syphilitic child. In mentioning other cases in older children, he states that transillumination is of very little value in the diagnosis. In both infants the purulent process invaded the cheek and was operated on externally.

I have been somewhat surprised to note the predilection of the Vienna laryngologists † for intranasal irrigation in empyema of the antrum. They claim that a very large proportion of the cases may thus be cured, and say that even operative procedures fail to relieve the obstinate cases except after many months of treatment.

M. Lavrand, in the *Revue hebdomadaire de laryngologie* (No. 35, 1896), reports several cases of mutism in young children who heard well and whose intelligence was apparently up to the average or above it. No one can be in general practice very long, or practise laryngology even for a short time, without meeting with such cases in children from two to seven years of age. Their parents bring them, or their family doctor sends them, to have their frenum linguæ cut because they are "tongue-tied." One never sees such cases in children older than six or seven unless there is some mental deficiency well marked in other directions. As for cutting the frenum in these cases, it is about as rational and successful a procedure as the old Scythian custom of cutting the veins behind the ears for another purpose. Lavrand recommends "patient and systematic education." This, no doubt, is successful, but a more practical, less exhausting, and probably more successful method is turning them loose to play for several hours every day with prattlers of their own age. Bashfulness and a sense of their own deficiencies often restrain them in the presence of their anxious and critical elders.

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* *New York Medical Journal*, September 26, 1896.

* *Rev. hebd. de laryngologie*, etc., No. 43, 1896.

† *Journal of Laryngology*, November, 1896.

Hobbs, in the *Laryngoscope* for March, 1897, under the title of Some Amusing Instances of the Nasal Reflex, speaks of having cured one or two cases of chronic priapism by cocainizing the nasal mucous membrane. Chronic priapism is a rare affection, and, judging from two cases which came under my observation many years ago, one which resists cure by the administration of drugs. It seems to me that Hobbs's suggestion is one that should be borne in mind when such a case presents itself. The intimate relation of the erectile tissue of the nose to that of the penis in many points of its anatomy and physiology, and the interrelation of the occurrence of turgescence in the two localities during sexual excitement, lends probability to the reported success of this method of treatment.

Massei * makes a very interesting communication concerning peri-tracheo-laryngeal abscess in children, having observed several cases in which small abscesses had apparently formed beneath the mucous membrane during the course of a laryngeal diphtheria, or during some other inflammatory process causing intralaryngeal stenosis and necessitating intubation or tracheotomy, during the performance of which the condition was recognized. We are accustomed to keep in mind the influence of large bronchial glands upon pulmonary lesions and symptoms. Massei points out that there exists a small group of glands at the laryngo-tracheal junction, another one at the middle of the trachea, and an inferior larger group near the tracheal bifurcation. These may involve the recurrent nerve as well as the trachea, giving rise to symptoms dependent not only on tracheal obstruction, but upon paralysis of a vocal cord. That this occurs more frequently than we recognize it seems very probable. The difficulty of laryngoscopy in children, the occurrence of a concomitant laryngitis, either catarrhal or diphtheritic, no doubt frequently hides a small abscess of one of these glands pressing between the rings of the trachea or the tracheolaryngeal junction. This may discharge before giving rise to obstruction, having caused only hoarseness if it be one of the upper group which is involved, or, on the other hand, it may cause grave and even suddenly fatal dyspnœa. I have a case under observation at present in which I suspect this trouble following an ordinary coryza. These cases have not been carefully enough studied to lay down any reliable rules of diagnosis or treatment, but Massei has been wise in calling attention to an affection which needs more careful consideration.

The Buffalo Academy of Medicine.—At the last regular meeting, on Tuesday evening, the 22d ult., the following papers were to be read: Puerperal Septicæmia, by Dr. L. G. Hanley, and The Nature of Dysmenorrhœa, by Dr. M. D. Mann.

EXOPHTHALMIC GOÎTRE.*

By GEORGE H. COBB, A. M., M. D.

During the past five years there have come under the writer's observation fourteen cases of this disease.

The complexity of symptoms and variations from a common type awakened sufficient interest in the subject to undertake a review of the literature of the disease, and the results of that study are presented for your consideration and criticism.

Definition.—The definition depends somewhat on the accepted theory of causation and the proper division of the subject.

Three forms are recognized: Idiopathic, reflex, and secondary. Idiopathic exophthalmic goître is (1) a functional disease affecting the higher nerve centres of the brain. The cases belong to the psychopathic family, with hereditary taint of insanity, neuroses, tuberculous, cardiac, and rheumatic affections, or hereditary predisposition to the disease itself. (2) Intoxication of higher centres by the product of the diseased gland.

The reflex form is brought about by various abnormities in the organism, in the brain, spinal cord, thyreoid, digestive or genital tracts. The secondary form is due to lesions of certain nerves.

Historical.—We find the earliest authentic report by Morgagni in 1762. Occasional mention of cases appears down to 1835, when Graves presented A Newly Observed Affection of the Thyreoid Gland, *London Medical and Surgical Journal*, May 23, 1835. Von Basedow, in 1840 (*Wochenschrift f. d. g. Heilkunde*, 1840, No. 13 u. 14), reported four cases characterized by irregular pulse, palpitation, enlargement of the thyroid, bruit in the carotids, exophthalmos, obstinate diarrhœa, excessive perspiration, elevation of temperature, and thermophobia in the entire body. There was noticeable emaciation, especially of the breast, in spite of appetite, disturbance of menstruation, and pigment deposit in the skin. There was also sleeplessness, hastiness in speech and movement, followed quickly by exhaustion, and irritability resembling mania. Von Basedow believed the cause to be a dyscrasia affecting the quality and composition of the blood, which appeared in abnormal development of the glandular system and connective tissue, predisposed by scrofula in youth. The heart affection was secondary to blood change, and the exophthalmos was due to the increase of connective tissue in the orbit.

To this description was added the theory of Aran (after the experiments of Claude Bernard upon the sympathetic), that the sympathetic was the seat of lesion or disordered function.

Trousseau referred the symptoms to genital disorders and hysteria. The struma and eye changes were due to congestion. As early as 1862 Piorry advocated the idea that goître was the essential lesion, and all else was secondary to pressure on the vessels of the neck or changes in the blood. Tremor was added by Charcot as a cardinal symptom in the same year. This affected the forearm, leg, and tongue, seldom the whole body. Von Graefe described the eyelid symptom which bears his name in 1864.

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* *Rev. hebd. de laryng.*, etc., No. 7, 1897.

* Read before the Therapeutic Club, January, 1897.

Falling of the hair, vomiting, and diminished resistance to electrical stimulus joined this community of symptoms in 1871. Filehne found, in 1879, that partial section of the corpora quadrigemina in dogs produced imperfectly the picture of exophthalmic goître, and localized the lesion accordingly. Warner and Möbius, in 1882, observed ophthalmoplegia externa, insufficiency of convergence, and limitation of field of vision as frequent appearances. In 1886 Gauthier called attention to the chemical function of the thyreoid as related to morbus Basedowii. Further study has advanced along the following lines:

1. Blood and circulatory origin.
2. Neurotic origin.
3. Origin in the product of the diseased gland.

Anatomy.—The anatomy of the thyreoid may be briefly stated. It is a secreting, ductless gland inclosing within its capsule and connective-tissue stroma, acini lined with cubical epithelium. The interacinous stroma contains the blood-vessels and nerves, while the lymphatics form a network next the capsule. It is the area of anastomosis between the external carotid and brachiocephalic trunk. A fine network of veins incloses the capsule. The nerve supply is from the superior and recurrent laryngeal and sympathetic.

Physiology.—The physiological function is still a question for discussion. Buschan advocates the double duty of a regulating apparatus for the cerebral circulation, and secretion of a substance necessary to the body metabolism. Gauthier upholds this latter idea. Notkine has extracted from the thyreoid a toxine (thyreo-proteid) which causes in healthy animals cachexia thyreopriva. He believes that tissue metabolism produces this toxine, capable of causing myxœdema, unless neutralized by the antitoxine of the thyreoid (thyreoidin). An excess of thyreoidin produces exophthalmic goître. As myxœdema is an effort of the body to return to an embryonic state, the thyreoid function is to prevent this recurrence by stimulating action upon the trophic function of the nervous system.

Pathological Anatomy.—The following changes may be found: In the heart, hypertrophy of the left ventricle, less frequently the right, with dilatation, and mitral insufficiency, often relative, accompanied by slight endocarditis, with atheroma of the aorta.

In the abdominal viscera, induration of the ovaries and spleen, congestion and ecchymosis of Peyer's patches and the solitary glands, and a catarrhal condition of the intestinal mucous membrane.

In the muscles, fatty degeneration.

In the bones, diminution of animal matter and consequent brittleness.

In the lymph glands, hypertrophy. The thymus and hypophysis cerebri are often much enlarged.

In the orbit there is an increase of retrobulbar connective tissue, with fatty degeneration of the same.

In the brain one finds excessive vascularity of the meninges and surface of the hemispheres and the internal capsule, hence possibly tremor and complicating hæmorrhages. Pathologists further report sclerosis of tegmen, pyramids, fasciculus gracilis, cuneatus, and the roots of the tenth pair of nerves; tissue softening in the cerebrum, and hæmorrhage affecting the Sylvian aqueduct and restiform bodies. All of these appearances are not constant and are probably accidental.

In the thyreoid (1) the tissue differs from normal only in being coarser. (2) Cysts are more numerous, some containing colloid and others a papillomatous ingrowth. (3) Nævoid or erectile tissue is found, which explains the expansile pulsation in some goîtres, also the hæmorrhage during operation from thyreoid tissue itself, in contrast to normal thyreoid, which does not bleed except from the capsule. (4) Myxomatous changes of interacinous tissue. This stains a pale color, and contrasts with the dark staining colloid. The acini show at the centre the dark staining colloid, and near the periphery a pale staining mucinous secretion. (5) There is tissue of an embryonic type consisting mainly of secreting cells. It does not contain vesicles or colloid. In rabbits the parathyreoids have the same characteristics.

The occurrence is usually between the ages of fifteen and thirty. The extremes of age are two years and a half and sixty-eight. Of four hundred cases, there were three hundred and fifty-seven women and forty-three men.

Heredity.—About one half of all cases reported have a neurotic family history. The predisposing causes are anæmia, diabetes, rheumatism, tubercular and cancerous diseases, with fifty instances of Graves's disease in at least two generations of patient's family. Locality has no influence, and pre-existing simple goître little. The exciting causes are emotional disturbance, shock, anger, or long-continued anxiety.

Symptoms.—Enlargement of the gland appears in ninety per cent. of the cases, diminishing or disappearing after death. This enlargement constitutes a soft pulsating tumor extending below the clavicle, upward to the hyoid, and backward two inches and a half from the median line. The right lobe exceeds the left in size. Cases are reported of unilateral enlargement and exophthalmos. Yeo reports one of crossed thyreoid and eye symptoms. True glandular hypertrophy is often followed by fibrous changes. There may be increase of secretion, with no appreciable enlargement.

The heart symptoms are essential. Increased area of dullness, diffuse heaving beat. Palpitation frequently paroxysmal, as from emotion. Pulse small, soft, and dichrotic; rate variable from 120 to 200 a minute. Murmurs, systolic in time, are heard occasionally at a distance from the body. They are produced at the orifices of the large vessels, or due to relative mitral or tricuspid insufficiency. The diminished tone in the arteries accounts for the general pulsation of which patients complain.

Exophthalmia occurs in eighty per cent. of the cases, disappearing soon after death. The eyeball is increased in diameter one tenth. Von Graefe's lid symptom is present in fifteen per cent., and is due, as also Stelwag's sign, to the degree of protrusion of the eyeball, possibly increased by the irritation of the cervical sympathetic. Defective convergence and limitation of the field of vision, with ocular paralysis, are probably due to the stretching of the muscles. There may be œdema of the lids and loss of secretion, leading to ulceration of the cornea, though such ulceration has also been referred to the sympathetic (vasomotor) influence. The pupils are usually equal, and there is normal accommodation. Fundus and vision are unchanged except in a few instances.

The nervous symptoms are temporary and variable, hence are functional. Of these, the most constant is tremor, affecting the muscles of the forearm, occasionally the tongue, back, and limbs. The rhythm of this tremor is rapid and regular—about nine per second. Its amplitude is variable and quite independent of cardiac or respiratory rhythm. It is equal on both sides of the body, unless gland and eye of only one side are affected. It is increased by effort and excitement. Similar tremor appears in general paralysis, but affects the fingers also. The tremor of fatigue and weakness closely resembles it.

There may be hemianæsthesia or paræsthesia; also neuralgia, cephalalgia, choreic movement, and hemiplegia or paraplegia.

Sweating or bronzing of the skin have been noted, and are due to vasomotor paralysis, with subsequent deposition of blood pigment.

The mental condition is that of nervous expectancy. Exaggerated value is placed upon all circumstances, especially upon matters of small moment. There is restlessness of body, irritability of temper, and intolerance of contradiction. Excitation alternates with depression, and patients are often morose, quarrelsome, and untruthful. The memory is defective, sleeplessness becomes unbearable, and maniacal insanity may follow.

The digestive disturbances affect the appetite little. There are often gastric crises with polydipsia and boulimia, catarrh of the intestines, and diarrhœa of nervous origin. A nervous cough, frequent asthmatic attacks, rapid respiration (30 to 38 per minute), and bronchorrhœa due to cardiac weakness and anæmia, are the effects upon the organs of respiration.

The kidneys are overactive. Sugar and albumin are often present, the former more frequently. An excess of phosphates is found, and crises occur similar to those in the uric-acid diathesis. The thyreoid secretion, in excess of normal, is diuretic, as shown by experiment.

There is no change in the genital organs in ninety-five per cent. of the cases which is referable to the disease.

Emaciation (ninety-seven pounds in ten months in one case), general œdema, loss of hair, acne, scleroderma, gangrene, and diminished electrical resistance have all been observed.

Febrile attacks, variable in frequency and intensity, are usual.

Anæmia is present in ninety per cent. of the cases. The hæmocytometer shows about three million and a half to four million red cells and the normal number of white cells, and the hæmoglobinometer about fifty-five per cent. The blood spectroscopically is venous in character and disintegrates more rapidly than normal.

Complications.—Epilepsy is common; hysteria appears in thirty per cent. of cases; locomotor ataxia, chorea, tetany, arthritis, and endocarditis are rare.

The course is chronic usually. An acute form is, however, recognized. The number of cures is relatively small. Myxœdema follows in some cases. Death is preceded by intercurrent disease or results from the failure of the overacting heart. The most rapid development reported is forty-eight hours, and in cases of rapid development the patients are usually prompt to recover. (Time of recovery from two to six weeks.)

We now turn to a consideration of the various theories of this disease:

I. It is due to a circulatory disturbance as the primary cause. Von Basedow was the first to find its seat in a dyscrasia of blood composition and circulation. Anæmia played an important rôle. The appearance of pulsation in the large vessels, palpitation, chlorotic color, frequent occurrence in women, and the beneficial effect of pregnancy and lactation, with full diet, furnished the ground for his opinion. Thyreoid enlargement and slight degree of exophthalmos, with palpitation, do occur in anæmia and during menstruation. Kohlrausch attributed to the gland a hæmatopoietic function. The hyaline droplets with reddish tint found in the acini, mixed with the mucinoid secretion, he believed to be an embryonic form of blood-cells. The uniformity and number of these cells in dogs led to the belief that they are present as the result of hæmorrhage into the gland, but the droplets are produced from the epithelial lining of the acini with the mucous secretion. Analogies exist among connective tissues for this correlation of mucus and hæmatoblastic function, especially in new growths and early stages of fat formation, in the production of blood discs from mesoblastic cells at one stage and mucoid secretion at another. Now, although there is no evidence that enlargement and increased functional activity of thyreoid has a more specific relation to the blood forming than to the mucous function, yet enlargement in anæmic cases is better understood from the existence of such a function. The enlargement corresponds to the increased effort of bone marrow in pernicious anæmia. There are circulatory disturbances in this, as in suprarenal disease, plainly referable to the sympathetic. Horsley regards the thyreoid as a blood-forming organ, since seven per cent. more red cells are found in the thyreoid vein than in the corresponding artery. Eulenberg thinks that the changes are the result of an abnormal chemical composition of the blood, due to a specific watery secretion from the follicles of the goîtrous gland, also that complex of symptoms may be explained by such chemical change independent of any nervous influence. Buschan gives to the thyreoid the mechanical function of regulating the blood supply to the head, having found that in the horizontal position of the body during sleep the circumference of the neck increases three to five centimetres. In a goîtrous gland the increase is greater, and compensating for the overacting heart, prevents serious harm to the brain.

Against this theory we find: 1. The appearance of exophthalmic goître in perfectly healthy subjects. 2. Chlorosis, common as it is, is seldom the precursor of this disease. 3. Occurrence among men. 4. Occurrence among children and women apart from the period of sexual activity. 5. Full development in a few hours or days, even after the excitement of unpleasant dreams. 6. Exothyropexy, in which the circulatory and nervous relations of the gland are entirely changed, its secretory function alone being preserved (Godart).

The theory of a primary heart affection is untenable, since the majority of cases present no organic lesion of the heart.

II. The disease is due to a derangement of the sympathetic system. Branches are given off from the three upper cervical ganglia to the eye, to the thyreoid, and to the heart. In a few cases there have been found pathological changes in the cervical sympathetic, hence this theory. It is tenable in some secondary forms. Stimulation of the sympathetic in the neck will produce exophthalmos with dilatation of the pupil, accelerated heart action, and increased secretion of the thyreoid. Section of the sympathetic produces the opposite.

By a series of experiments it was found that (*a*) ligation of the external jugular vein gave temporary exophthalmos; (*b*) ligation of both external jugulars and section of the sympathetic on one side gave permanent exophthalmos on both sides; (*c*) ligation of one vein and section of sympathetic on same side gave temporary exophthalmos on corresponding side; (*d*) extirpation of upper cervical ganglion gave permanent exophthalmos, doubtless due to venous congestion in the orbit.

Trousseau explained the sympathetic theory by the coexistence in the same nerve bundle of paresis and irritation. Eulenberg applied the idea to the nerve roots in the medulla, including the vagus in the paretic, and the sympathetic in the irritated class. This is upheld by the existence of anæsthesia dolorosa, and the coexistence of hyperæsthesia and motor paralysis. Friedreich accounts for the three cardinal symptoms by a paresis of the vasomotor heart fibres, consequent dilatation of the coronary arteries, and congestion effects in the head and neck secondary to the heart.

The implication of the vagus and sympathetic fails to account for epileptiform seizures, choreic movements, tremor, paresis of various groups of muscles, emaciation, and disturbance of the urinary organs. The sympathetic alone leaves unexplained the rapidity of the heart action (seldom rising above 130 from the stimulation of the sympathetic), laryngeal, pulmonary, and gastric signs, The vagus alone presides over the dilatation of the heart, pulsation in the great blood-vessels, appearance of suffusion in the skin, and rise of temperature.

The theory of medullary seat of lesion is nearer the truth. Experiment has shown that paresis of the third, fourth, fifth, and seventh pair of nerves will give all the symptoms of exophthalmic goître. In rabbits the partial section of the corpora quadrigemina at the anterior part produced exophthalmos, von Graefe's sign, and hyperæmia of the thyreoid. These animals are poor subjects of experiment, since they possess relatively small thyreoids. Bienfait corroborated the above in dogs, obtaining also irregular heart action but slowing of the pulse. The medulla theory does not explain tremor, paresis, psychic, nervous, and trophic changes. Raymond thinks the disease a general neurosis having spinal, bulbar, and cerebral symptoms, and that the associated psychical disturbances are the result of hereditary disposition.

III. The toxic theory was first advocated by Möbius, and is warmly upheld by most recent observers. Other explanations may account for the secondary or reflex forms, but in genuine morbus Basedowii the diseased thyreoid is evidently the seat of the lesion. The comparison and contrast of exophthalmic goître and myxœdema, between the effects of atrophy and hypertrophy of the gland, furnish the foundation for this theory.

In myxœdema we find atrophy of the gland with diminished secretion, slowing of the pulse and weak action of the heart, increase in bulk of the body, due to mucinoid infiltration, depression of temperature (even to 95), dryness of the skin with increased electrical resistance, dullness, inactivity and apathy, and probably an excess of thyreoproteid.

In exophthalmic goître we find hypertrophy of the gland with increased secretion; delirium cordis with acceleration of the pulse; emaciation; paroxysmal, often constant, rise of temperature; profuse sweating, with diminished electrical resistance (from seven thousand to seven hundred milliampères noted); excitability; overactivity, followed by speedy exhaustion, anxiety, and probably an excess of thyreoidin. Another favorable argument is the effect of thyreoid extract on myxœdema. Proteid metabolism, small and imperfect, rose under its use nearly to normal. Increase in quantity of the extract gave increased metabolism, but induced acceleration of the pulse, rise of temperature, and abnormal diuresis. Similar doses of the extract in the healthy subject will cause all the symptoms of morbus Basedowii except exophthalmia. In a patient already showing the effect of thyreoidin intoxication the symptoms are aggravated.

Animals deprived of the thyreoid were kept alive by the use of the extract an average of forty-four days (twenty experiments), dying of exhaustion and emaciation. A few had myxœdema of the acute type with tremor and convulsions. Other animal extracts used in control experiments had no beneficial effect.

The changes which take place are due to the failure in molecular nutrition resulting from faulty thyreoid metabolism. What this metabolism is we do not fully understand as yet. The most acceptable explanation is the neutralizing by the thyreoid secretion (thyreoidin) of the products of tissue metabolism (thyreoproteid), which without this antitoxic action proves injurious to the nervous system. Such products have a tendency to cause retrograde changes similar to those seen in myxœdema, while the antitoxine in abnormal quantity has an intoxicating effect upon the nervous system. The normal quantity of secretion is necessary to the maintenance of the trophic function. A partial analogy to the intoxicating influence of thyreoidin may be found in cocaine poisoning. After the division of the sympathetic in the neck, the nervous, eye, and heart symptoms followed cocaine injection, and were not increased by the addition of thyreoid extract to the cocaine injection. Dilatation of the pupil was added to the usual eye symptoms. Further, there is usually improvement after partial removal of the gland. The changes in the nervous system are similar to those occurring in other toxic diseases.

Against this is the experiment on dogs, which shows that the blood of athyreoidal dogs has no effect upon healthy subjects when given by venous injection; also that the albumoses extracted from the spleen of athyreoidal dogs has no effect upon guinea-pigs or healthy dogs after subcutaneous injection.

IV. The last theory is that morbus Basedowii is a brain disease affecting the higher nerve centres of the brain. The cases belong to the psychopathic family with hereditary taint of insanity, neuroses, tuberculous, rheumatic, and cardiac disease; also predisposition to the disease itself. Overstrain of the medullary and other centres intimately connected with the emotions is an important factor, in view of the large percentage due to shock and anxiety. The vagus and sympathetic are the channels of outward expression for the effects of shock. This theory assumes the earliest effect upon the heart through the vagus root. Then appear pulsation in the arteries in the neck and visible distended veins. Murmur over the thyreoid. Softness of thyreoid tumor, presenting to palpation a cystic character. Dependence of size of goître on greater or less activity of the heart, as seen from the effect of emotion or menstruation on patients. Sudden appearance in a few days or hours. Disappearance of exophthalmos and diminution of the goître soon after death. The principal advocate of this theory acknowledges the probable furtherance of the disease by abnormal secretion of the gland in those predisposed.

Diagnosis.—This is made from symptoms already enumerated: differentiating secondary form, due to certain nerve lesions and accompanying gland hypertrophy; reflex, due to diseases of other organs; and the genuine form.

Treatment.—This includes the rest cure, with its careful dietary, hydrotherapy, and massage, from which most favorable results have been obtained. Application of ice bags to the heart and gland; to the latter also iodine and the red iodide-of-mercury ointment. Injections of iodine, ergot, and belladonna into the gland substance, singly or combined. The use of electricity, either as galvanization or faradization, applied to the neck. Internally, the use of belladonna to diminish secretion; the iodides, which often prove injurious in genuine cases; iron for the anæmic cases, alone, or better with arsenic; bromides, hyoscine, and hyoscyamine for the nervous symptoms; digitalis, strophanthus, and sparteine for the cardiac symptoms. The first of heart tonics is suitable only in the presence of asystole and pulmonary congestion, the second well borne and beneficial in doses increased gradually to seventy-five minims daily. Recently, Trechewsky advocated the use of sodium phosphate in increasing doses to two drachms daily, adopting the plan on account of the abnormal excretion of phosphates in the urine of goîtrous subjects. The use of thyreoid extract is unadvisable and unscientific in the genuine form, as we have to do with an excess of thyreoid product already. Some instances of benefit from its use must find explanation in the fact that real glandular atrophy (*i. e.*, diminished secreting tissue) occurs with an apparent enlargement of the gland. The use of thymus gland (Cunningham, and more recently Mackenzie) has had apparent good result in some instances, but in a list of cases numbering thirty-five the effects are not sufficient to warrant the introduction of thymus as the much-desired specific. In secondary and reflex cases the treatment was directed to the cause of the disease, and amelioration of symptoms followed—*e. g.*, cauterization of the nose or removal of polypi, as reported by Mackenzie, and removal of the cervical tumor which pressed upon the vagus and sympathetic.

The advisability of operative treatment for partial removal of the gland is no longer a matter of doubt. The operation is a dangerous one, and unfavorable results are apparently due to a sudden absorption of glandular secretion, not alone from the gland substance, but from adjacent tissues. The death-rate is still high, but relatively lower as the operations become more numerous.

Notkine has found by experiment that complete thyreoidectomy causes death of the animal whatever its habits or the nature of its food. Death of such animals is due to one or more poisons accumulating in the system. True auto-intoxication is more marked if the animals are not fed. If the parathyreoid is left, cachexia seldom follows the operation. The parathyreoid, thymus, and even hypophysis cerebri developed compensatory hypertrophy. This may explain the so-called persistent thymus in cases where enlargement of gland has already reached a fibrous stage, the symptoms of an earlier period having abated, and yet myxœdema has not appeared.

Edmonds's experiments on rabbits gave the following results: 1. Removal of the thyreoid and parathyreoid; all died. 2. Removal of thyreoid; twenty out of twenty-four died in ninety-seven days. In four there was a condition resembling myxœdema in man. The parathyreoid simply hypertrophied, but developed no acini and no colloid. 3. The parathyreoids alone removed; the animals, as a rule, lived.

Experiments on dogs: 1. Removal of one lobe of thyreoid, adjacent parathyreoid, and two thirds of other lobe; the animals lived. The remaining portion hypertrophies. 2. Extirpation of all but three fourths of one lobe is practicable.

The parathyreoids are more important, bulk for bulk, than the thyreoid itself.

The removal of the spleen, followed a month later by thyreoidectomy, has been accomplished without subsequent myxœdema. Zanda's inference from this is that myxœdema is due to a collection in the blood of toxic products of spleen metabolism.

The urine of athyreoidal dogs is abundant, alkaline, and was found by injection into rabbits to be five times more toxic than normal urine. The poisonous quality is due to the presence of ptomaines, convulsive agents, muscular poisons having special effect upon the heart muscle.

After operation there are degenerative changes in the liver, spleen, and convoluted tubes of the kidneys. The blood in these organs was not affected, but changes resembled those in other toxic diseases.

Section of the cervical sympathetic has been recommended for relief of serious exophthalmos.

Operative treatment should not be undertaken at once, but, other measures failing, it must receive due consideration.

Diet.—Milk diet is undoubtedly best in the severe forms of the disease. The same dietetic indications are usually present as in anæmia.

Of my own cases, one male and thirteen females appear in the list. Two were of reflex origin, one from uterine disease, the other nasal. Both belonged to the neurotic class. The former had chorea in childhood, the latter gave a tuberculous family history. Marked benefit followed treatment. Two others derived no benefit from treatment and disappeared from observation at the end of ten and eighteen months respectively. The development in both was slow during the years between thirty-five and forty-two. Insanity in father's family of one and rheumatism in family and personal history of the other. The fifth case, in a child of twelve—a healthy girl, father alcoholic—developed in four days after a violent paroxysm of anger. The heart and gland symptoms were fully developed, exophthalmia was moderate, and tremor was present. This case is slowly improving. The only male patient gave a tuberculous family history; first, noticed the heart symptoms after a severe typhoid fever. The eyes and gland became prominent during the following six months. After five years, at the age of thirty-eight, he came under observation and presented all the clinical features of the disease. At the end of four months improvement is present in eye, size of gland, and pulse-rate (fallen from 136 to 98 a minute), and tremor is noticeable only during excitement. Treatment is with strophanthus, forty-five minims daily, and sodium phosphate, forty grains a day. Four with the disease of a mild type are steadily improving under the same treatment, and are able to follow their regular occupation with the help afforded by medicine and the careful hygiene ordered. Four patients with a severe type were benefited by the rest cure at first. Two have continued to improve, and two have died, one of pneumonia and the other of apoplexy.

Of these two a few words may be of interest. The first, a woman of twenty-eight, weighing a hundred and fifty-six pounds and in good general condition, came under observation in June, 1895. The family history revealed the fact that the mother and two sisters suffered with the same disease. The heart, gland, eye, and nervous symptoms were all present. She was advised rest and given strophanthus, with sodium phosphate, milk diet, and massage. When next seen, in November of the same year, on her return to New York, it was learned that in the interval no rest had been taken. Instead of the plan suggested she had made use of six ounces of desiccated thyreoid, and had acquired the habit of using a half ounce of tincture of digitalis daily to control the tumultuous action of the heart. The results were shocking. Loss of sixty pounds in weight, exophthalmia increased, hypertrophy of gland also, cardiac dilatation extreme, pulse irregular and 160 a minute, nervous symptoms exaggerated (a general tremor), frequent asthmatic attacks, persistent nausea and vomiting, also uncontrollable diarrhœa. Polyuria and polydipsia were present. The rest cure and hospital regimen proved beneficial in less than a month. Grippe, followed by pneumonia, caused death. The second case was one of acromegaly and exophthalmic goître. Cardiac symptoms were here most troublesome. The patient, who had been seized with the disease after prolonged worry, was forty-three years of age and of rheumatic family and personal history. For three months there was little improvement except increase of muscular power and slowing of pulse from 140 to 100 a minute. During two months following, the improvement was more rapid. At this time the patient, while absent from home, suffered severe fright, followed by a return of heart symptoms. The physician in attendance, recognizing the weakness and dilated condition of the heart, writes that he gave digitalis, in fifteen-minim doses of the tincture, every three hours. Eighteen hours later left hemiplegia appeared, and four hours after the patient died. The diagnosis of acromegaly was substantiated, and in this case, as usual, there was complete disappearance of exophthalmos, and noticeable diminution of the goître forty-eight hours after death.

This study of the great body organizer, which keeps all the tissues constantly stimulated to their highest pitch of effort and prevents them from relapsing to the embryonic or myxoid state, is presented for your criticism and discussion.

I am indebted to the *Index Medicus*, to a monograph by Buschan, Berlin, 1894, to Schmidt's *Jahrbücher*, Sajous's *Annual*, and the bibliography found with articles and monographs mentioned above. The selections made from the mass of literature on this subject are those which present ideas held in common by many competent observers, and in large part substantiated by experiment. From the nature of the disease many variations are found in individual cases, but they are apparently accidental, and scarcely deserve serious consideration in this place. The subject-matter of four hundred manuscripts has afforded the material for this presentation of the subject.

18 West Thirty-fifth Street.

A CASE OF EXOPHTHALMIC GOÎTRE TREATED WITH THYMUS GLAND.[*]

By CHARLES E. NAMMACK, M.D.,
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Georgiana D., twenty-one years old, native of the United States, applied for treatment on account of palpitation of the heart with prominence of the eyeballs and a swelling in the neck, which symptoms had existed nine years. None of her ancestors had been similarly affected, nor had any been insane, epileptic, or neurotic, so far as known. She had not been subjected to sudden moral shock or to prolonged grief. The palpitation had been noticed first. Examination showed the pulse rate to be 144; apex-beat displaced downward and to the left; impulse not strong; basic systolic murmur; venous hum in the neck; capillary pulse not demonstrable. The circumference of the neck was fourteen inches and an eighth (an increase from thirteen inches and a half since her own first measurements), the enlargement of the thyreoid being greater on the right side. On palpation, a thrill was felt in the goître, and on auscultation a distinct systolic murmur was heard. Exophthalmia was marked, and vision practically normal in each eye. Traumatic keratitis existed. Ophthalmoscopic examination showed normal eye grounds. The symptom of Joffroy—viz., the absence of facial contraction when the patient suddenly turned her eyes upward—was demonstrable. Von Graefe's sign absent. The patient's general condition was that of anæmia, with mental depression from the failure of previous treatment to relieve her symptoms. She had frequent attacks of profuse perspiration. Tremor was present and increased by voluntary muscular effort or emotion. Transient albuminuria existed, and the patient suffered from nocturnal incontinence of urine, which was much lessened in frequency by elevation of the foot of the bed and the internal use of belladonna. Digestion was fairly well performed, although occasionally attacks of looseness of the bowels occurred, and migraine happened about once a month. No cranial nerve palsies. The course of her disease had been attended by slight remissions, but, on the whole, had been progressive. Latterly the palpitation and dyspnœa had decidedly increased.

The pathology of Graves's disease has been the subject of much discussion and investigation, and the consensus of recent opinion seems to be that it results from a *perversion* of the function of the thyreoid gland, whereas myxœdema and cretinism result from simple *loss* of function of the gland.[*]

Some would attempt to correct this perversion of function by excising the thyreoid gland, others by administering thyreoid extract to atone for the loss to the blood of the proper thyreoid secretion. Each procedure has been highly praised, and each condemned with emphasis, by various writers. An eminent clinician of this city accepts the blood-poison theory, but thinks that the poisoning results from gastro-intestinal ptomaines, and treats his patients successfully by eliminating meat from the diet and substituting fermented milk as the staple article, together with the systematic and unremitting use of intestinal antiseptics. A recent method of treatment which has attracted the attention of many is the administration of thymus gland, the results of which have been summed up by Hector Mackenzie.[†] This writer states that the thymus gland possesses no specific action in Graves's disease, but that it improves the patient's general condition, and should be placed in the same class of remedies as cod-liver oil. Some of the authorities reviewed by him, however, report very gratifying results from its use. Todd,[‡] in particular, reports excellent results in a case very similar to ours, in which the amount of thymus was gradually increased to a hundred grains daily. My patient began with three of Armour & Co.'s tablets, equivalent to twenty-four grains a day, and is now taking seventy-two grains daily. In her case the pulse is now 132, measurement of the neck fourteen inches and an eighth, exophthalmia much less, tremor decidedly relieved. The patient herself states that she suffers much less from palpitation and nervousness since she began taking the thymus tablets. It is difficult, however, to estimate the value of any remedy in a disease so variable in its course as exophthalmic goître, since marked remissions—even intermissions—sometimes occur.

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[*] Patient presented before the Section in Pædiatrics of the New York Academy of Medicine, April 8, 1897.

[*] *American Journal of the Medical Sciences*, February, 1897, p. 219.

[†] *Ibid.*, February, 1897, p. 151.

[‡] *British Medical Journal*, July 25, 1896, p. 195.

42 East Twenty-ninth Street.

THE PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from vol. lxv, page 857.*)

Part II.

It may perhaps be of interest to compare the methods pursued at the different clinics in the preparation of their cases, their application of the principles of asepsis and antisepsis, their choice of anæsthetics, suture, and drainage material.

In Hamburg, Kümmell has his patients shaved beforehand, and an antiseptic dressing applied to the field of operation. After they are placed on the operating table the dressing is cut away, and the skin is first washed with a mixture of green soap and sand with water. This is applied with a handful of wood fibre. It gives an excellent lather in a short time, and has the additional advantage that the same wood fibre is only used once and then thrown away. After the soap is washed away alcohol is applied, and then a strong solution of sublimate. The hands of operator and assistants are scrubbed in the same manner as the skin of the patient, a brush being used for the nails. Kümmell lays great stress on the length of time the hands are scrubbed with soap. He has sand-glasses standing at the wash basins which allow the sand to run through in five minutes; he, as well as his assistants and nurses, scrub during that length of time. By means of a pedal, which compresses a rubber bulb connected with a rubber tube that runs into a vessel containing alcohol, enough of the alcohol is forced out and runs into a small glass tray. Each person assisting at the operation in turn compresses the rubber bulb with the foot, and thus gets his or her supply of alcohol for the hands. Then the hands are scrubbed in a solution of 1 to 1,000 sublimate. Of the general anæsthetics, Kümmell prefers chloroform, but uses ether in cases of advanced cardiac disease. For local anæsthesia, ethyl chloride is employed. During an operation, instruments and suture material, lying in their solutions, stand at the side of the operator, who reaches his instruments and threads his needles himself. The needles used have springs instead of eyes. Kümmell maintains that before he has told an assistant what he wants, and before the assistant understands him and carries out his order, he can help himself. For suture material, silk is used almost exclusively, even in tying off small vessels in the soft parts. Kümmell believes that fine silk is absorbed almost as readily as catgut. What little catgut he used was sterilized with dry heat. For drainage in the soft parts—*e. g.*, after extirpation of tubercular glands—glass drainage-tubes with lateral openings were employed; no rubber ones. For drainage after vaginal hysterectomy, iodoform gauze is used; likewise after epicystotomy, a small iodoform-gauze drain is introduced at the lower angle of the wound. There is a separate room devoted only to cœliotomies; here Kümmell allows no nurses, and only one assistant at the wound; the instruments and suture material he reaches himself. By this method the number of persons who can introduce infection is limited to two. Every additional one increases the risk.

In Dresden, at the Frauenklinik, Leopold generally has his patients shaved and scrubbed after they enter the operating room. There is a separate room in which only cœliotomies are performed. If feasible, Leopold does only one cœliotomy in a day, and does it very early in the morning. He maintains that it is better for the patient if she does not worry until late in the day before the operation is performed. He does not like to do more than one cœliotomy in a morning, because, he says, there is not the same certainty that everything pertaining to the operation is sterile when several cœliotomies are done in succession; neither are operator or assistants as fresh and able to work quickly, which Leopold considers an important element. At cœliotomies he has only one assistant, the nurse who hands sponges assisting at the wound when necessary. Hands are scrubbed with soap and water, then they are immersed in sublimate, 1 to 2,000, and, lastly, in sublimate, 1 to 1,000; no alcohol is used. Before every vaginal operation a good-sized cotton plug, lubricated with vaseline and attached to a silk ligature, is introduced into the rectum. To dilate the uterine cavity for purposes of examination, or to curette the uterus, either laminaria tents or hard-rubber stems are introduced from day to day, beginning with the smallest size. In this way the uterine cavity may be dilated sufficiently to introduce the finger for purposes of examination. An anæsthetic is avoided thereby, and Leopold holds that the tissues of the cervix are less injured than by the use of the metallic dilator. After such a stem is introduced the temperature is measured every three hours, and if there is any rise the stem is removed. But they say this rarely ever is necessary. Before a vaginal operation the vagina is scrubbed with soapsuds and then with sublimate, and the uterine cavity is swabbed out with cotton dipped into sublimate. The anæsthetic generally employed is ether. For ligature and suture material silk is used almost exclusively. Instruments lie on a moist sterilized towel in the bottom of a tray, but not covered with any solution. A number of needles are threaded before the operation and lie in soda solution, and two needle-holders are kept in use, thus saving time. For abdominal drainage, when considered necessary, plain sterile gauze is employed.

Credé, at the Carola Haus in Dresden, has his patients shaved and scrubbed in the operating room. In his work he is more antiseptic than aseptic; he owns that asepsis is the ideal, but not yet practicable. For suture as well as for ligature material silk is employed, rarely catgut. Like Kümmell, he even employs silk to tie off small vessels, and likewise maintains that it is quite readily absorbed; but in tying off the neck of a hernial sac he employs catgut. For several months he has been experimenting with the silver salts as antiseptics, employing combinations of the oxide with citric or lactic acid. He found that not only did bacteria not grow on culture media where the silver salt was added, but the bacteria were actually killed thereby, and there remained a sterile zone on the culture media wherever the silver rested. The powder is odorless and does not poison; it can be used in solution if desired. Credé considers it far superior to iodoform in every way, and has for several months given up the use of the latter altogether. I saw many wounds in which silver had been used, generally the citrate, commercially known as "itrol," and they were all dry and free from irritation. Credé is also experimenting with silk and catgut sutures impregnated with a solution of "itrol." I saw such stitches removed in a case of inguinal hernia on the ninth day, the dressing having consisted of silver gauze. The wound was absolutely dry. Credé assured me that he had not seen it otherwise since he had been using these sutures.

Sänger, in Leipsic, is very careful in preparing the skin of patients and of his hands. He scrubs his hands repeatedly with green soap mixed with a fine sand, then immerses them in alcohol, and finally scrubs them with a watery solution of corrosive sublimate (1 to 1,000). To make his sublimate solution he employs tablets of corrosive sublimate and tartaric acid which dissolve very quickly. Operator and assistants wear freshly sterilized gowns, and, during cœliotomies, also sterilized caps. During an operation the instruments lie on sterilized cloths, not in any solution. Gauze sponges only are used; before the beginning of the operation they are moistened with a sterilized soda solution. They stand within reach of the operator in the can in which they were sterilized, and thus are only touched by the operator from the time they have been put into the sterilizer until they go into the wound. As a suture and ligature material silk is used, Sänger even burying it in the anterior vaginal wall. For buried sutures in the posterior vaginal wall catgut is employed, because Sänger has found that here the silk, if buried, would irritate. The silk is boiled and placed in Bergmann's solution, a one-per-cent. solution of corrosive sublimate in eighty per cent. alcohol. During the operation the silk lies in a 1-to-1,000 watery solution of sublimate. After the operations of the day are completed the silk is again boiled and preserved in Bergmann's solution. Scalpels are placed in a perforated metallic case and boiled with the other instruments. Being in a separate case prevents their being knocked against by other instruments and thereby dulled. To dilate the uterine cavity Sänger uses laminaria tents; they are sterilized by placing them in a boiling five-per-cent. solution of carbolic acid, in which they can remain one and a half to two minutes, depending on their size, without injuring them. Prepared in this way they never give rise to any infection, and obviate the use of an anæsthetic to dilate the uterine cavity.

At the Frauenklinik, in Berlin, both Ohlshausen and Winter are very thorough in their antiseptic and aseptic arrangements. In vaginal operations no towels are placed over the patients, but the lower part of the abdomen, the vulva, the buttocks, and the upper part of the thighs are thoroughly scrubbed with soap and water; then alcohol is used, and finally sublimate. Instruments, after having been boiled, lie in glass trays, not in any solution.

As suture and ligature material, in contradistinction to Hamburg, Dresden, and Leipsic, catgut is used almost exclusively. It is boiled in a dilute solution of alcohol to which five-per-cent. carbolic acid is added. They use medium-sized gut chiefly, and it is very strong. Even vaginal and abdominal hysterectomies are performed with only this gut as ligature material. For vaginal or abdominal drainage iodoform gauze is employed. A separate operating room is devoted only to cœliotomies.

In most of the other Berlin gynæcological clinics the arrangements are similar. Catgut is used almost entirely. Mackenrodt was at the time using catgut which he boils over a water bath in a solution that boils at 100° C. As he was not yet through with his experiments he did not wish to mention the composition of the solution, but assured me that he found the gut sterile as regarded all ordinary germs; but that he had not yet succeeded in killing the germs of anthrax. He has been using catgut prepared in this way for several months, and is well satisfied with it. It certainly is very strong, and I have rarely seen a piece torn.

Martin, of Berlin, does all his work at his large private clinic. He is very dexterous with the knife, and even more so with the needle. It would appear as if his good results were largely due to this dexterity, for he makes but little attempt to thoroughly carry out the principles of asepsis and antisepsis. He performs all his operations, both vaginal and abdominal, in the sitting position. At his vaginal operations he wears a rubber apron, which he adjusts before beginning his operation; he also grasps the buttocks of the patient, touches the table or his chair, and goes right on with his operation as if nothing had happened. The patient is chloroformed outside and placed on the table with most of her clothes on. After the clothes are removed the lower part of the vulva is shaved, not the mons Veneris, neither is the shaving done very thoroughly. Then the parts are scrubbed. The only disinfection of the vagina consists in irrigation. Some instruments lie on an ordinary table, not on any sterilized cloths; other instruments lie in sterilized water on the operator's left side. Some instruments are taken from the instrument closet by a nurse who is not disinfected, during the course of an operation, and handed to the operator, who does not mind inserting them into the peritoneal cavity. Neither does he mind grasping his chair, and with the same hand, a moment later, releasing an adherent uterus or ovary. These things are not exceptions, but may be seen daily at vaginal operations. Abdominal operations are performed in a separate room. Before entering that room all visitors remove their coats, and pass before a carbolic spray which plays in front of the door. The operator and assistants wear white coats and trousers, but Martin wears a rubber apron over all. He sits on a stool at the foot of the short table, with the thighs of the patient dangling down alongside his thighs. Trendelenburg's position is never employed. There is but one assistant, whose chief duty is to prevent the abdominal contents from protruding through the incision. The light falls in from a window on the right side of the patient, and on this side the assistant sits on a low stool. The patient is completely stripped, and neither towels nor cloths are placed about the incision. There is more care exercised here in carrying out the principles of asepsis, but the rubber apron still comes into play. He frequently allows an abdominal tumor to rest against it while tying off its pedicle. If he touches the thighs of the patient he merely dips his hand into sterile water, and then goes on with his abdominal manipulations. While the sutures for closing the abdominal wall are being introduced, an ordinary flat sponge soaked in oil that has been boiled is introduced into the peritoneal cavity. Martin hopes thereby to prevent the formation of adhesions, and especially to avoid the formation of an ileus. It is a curious proceeding which, so far as I know, has found no imitators. Catgut is used to the exclusion of all other suture material, both in vaginal and in abdominal work. In his vaginal work he continually irrigates with hot sterilized water, which may, by washing away germs that certainly must be introduced during an operation, prevent infection. In his abdominal work, no doubt, the rapidity with which he works, and consequently the short time the peritoneal cavity is open, aid materially in bringing about his good results.

Neither at Prague nor at Vienna is there any noteworthy point of difference from the methods pursued at the German clinics.

Von Winckel, in Munich, uses his instruments dry; after disinfecting the hands, they are dried, and he uses only dry gauze sponges. He is slow and painstaking in his work and careful in arresting hæmorrhage. In abdominal operations he does not employ Trendelenburg's position, but uses a Martin table. The legs of the patient do not hang down over the foot of the table as with Martin, but rest on footstools. He has two operating rooms and two sets of instruments, the one for abdominal, the other for vaginal operations.

Inverardi, in Padua, likewise uses a Martin table, and follows the Berlin school in using catgut entirely, both in vaginal and abdominal operations.

In Bologna, both Calderini and Novaro are very careful in the preparation of the hands. After scrubbing thoroughly with soap and water, the hands go into permanganate of potassium; then they are decolorized, and finally are immersed in a solution of 1 to 1,000 corrosive sublimate. Novaro, who has large surgical as well as gynæcological material, assured me that during the past two years he had not had a case of sepsis that developed in the clinic. Calderini has a useful apparatus for irrigating the bladder, uterus, or vagina. It consists simply of a glass flask with a flat bottom, so that it can stand on a table. It has a rubber cork with two holes for glass tubes—a long one reaching almost to the bottom of the flask, and a short one reaching only through the cork. For use as an irrigator, a rubber tube is attached to the short glass tube, the flask is raised by the nurse and inverted; the fluid promptly flows through the short glass tube into the rubber tube. Several such flasks can be kept standing on the table with different solutions; the same rubber tube can be detached and used for the different solutions. Such a flask would also be of service at home in place of the rubber irrigating bag, its advantages being obvious.

Freund, in Strassburg, uses gauze impregnated with thymol instead of iodoform for abdominal drainage. He uses silk for his mass ligatures, and silver wire for abdominal sutures.

At the private hospital of Jacobs, in Brussels, the patient is brought into the operating room narcotized and is placed on the operating table, where the vulva is well lathered with a saturated alcoholic solution of green soap, and then shaved. The vagina is cleansed in the following way:

1. A saturated alcoholic solution of green soap is applied with sterilized cotton.

2. Equal parts of a saturated solution of biborate of sodium and a saturated solution of carbonate of ammonium are poured freely into the vagina, and they dissolve the soap as well as any oily secretion that may be in the vagina.

3. Alcohol.

4. A solution of formalin (1–1,000 to 1–2,000).

The hands are prepared as follows:

1. Thorough scrubbing with green soap and sand.

2. The solution of sodium and ammonium mentioned above.

3. A solution of formalin (1–1,000 to 1–2,000).

The skin of the patient is prepared in the same way as the hands of the operator, and Jacobs says that he has seen no suppuration in the abdominal wall since he has been using this method. At cœliotomies, operator and assistants wear white linen coats and trousers as well as caps. At vaginal operations the caps are omitted. He irrigates very seldom during vaginal operations, and uses dry sterile cotton as sponges. He rarely employs drainage; when he does, he uses plain sterile gauze. Since witnessing a death from iodoform poisoning he has given up iodoform gauze entirely. For ligature material, silk is used, for suture material, silkworm gut. Both the silk and the silkworm gut are boiled in glycerin, the temperature thereby being raised above 100° C. Since adopting this procedure he has no more fistulæ, and buries the silkworm gut in the abdominal wall with impunity.

In Paris a little alcohol is applied to the trays that are to hold the instruments and dressings, and it is then ignited. This is supposed to sterilize the trays. Chloroform is used more than ether as an anæsthetic. Permanganate of potassium is often used for the hands. Iodoform or plain gauze is employed for vaginal and abdominal drainage. As clamps are left in place, there is not much ligature material. When it is employed, it is generally silk. For suture material, silk or silkworm gut is used. By some, Trendelenburg's position is employed, others use Martin's table. At some of the clinics instruments lie in a solution of formalin (1 to 5,000) during the operation. Some operators do not depend on the permanganate alone for the hands, but after decolorizing with sulphide of sodium they immerse them in corrosive sublimate (1 to 1,000).

In London the methods of carrying out the principles of aspesis are unique. I have frequently seen a patient brought into the operating room without having the vulva shaved, or having any antiseptic dressing on. She has then been placed on the table, the vagina swabbed out with cotton dipped into a solution of sublimate, and then extensive plastic operations have been performed. I have seen the operator help lift the patient on to the operating table, and not wash his hands again. No towels were placed over the patient. One afternoon I saw a doctor and a nurse assisting at several plastic operations on the vagina—neither one disinfecting the hands, nor even rolling up the sleeves. Nowhere, even at abdominal operations, did the nurses wear gowns, or even take off their cuffs. I once saw a nurse, who was washing sponges, leave the operating room on an errand, open and close the door herself, and touch I know not what during her absence, and then, to my horror, march right up to the dish containing the sponges and hand one to the operator, who promptly introduced it into the peritoneal cavity. But I quite forgot this little episode when, an hour later, this same operator, having completed his operation and dressed himself, was standing by the operating table with his hands in his pockets watching a colleague performing an abdominal operation; the colleague requested this gentleman to feel of the uterus, and promptly the right hand left the pocket and went into the peritoneal cavity! Ordinary sponges are generally employed, even in abdominal operations. Trendelenburg's position is rarely used. Glass drainage-tubes are still employed in abdominal drainage. Ether, chloroform, and the A. C. E. mixture are all used as anæsthetics. Silk, silkworm gut, catgut, and sometimes horsehair, the last-named for the skin, are all employed in London. Silkworm gut is sometimes buried in the abdominal wall.

ANOTHER YEAR'S EXPERIENCE WITH APPENDICITIS.*

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As long as appendicitis continues to occur so frequently, and as long as the mortality record continues so high, this question must be discussed in all its bearings until we arrive at definite and correct conclusions as to the causes and the treatment.

Whether it is a surgical or a medical disease is still questioned, although it is now universally admitted that some cases are surgical, and some attacks can be successfully treated by local and constitutional treatment. The latter point is, however, denied by the abdominal surgeon, who claims that all cases should be treated by the surgeon—not necessarily by operation, although those who have had the largest experience claim that best results will follow prompt surgical treatment.

This is my excuse for reporting some more cases, for only by accumulative evidence can correct conclusions be reached. The men who see only a few cases are not able to form the conclusions that one could who has had a large experience, and by those who see many cases in the course of a year reporting them, and by putting these together, so that we finally get the evidence from hundreds and thousands of cases, those who see comparatively few may be able to weigh the evidence as well as those who see many cases.

During the past year I have operated in thirty-two cases, with eight deaths. I have seen as many more cases in consultation, in some of which there was no operation; but most of them were in the hands of surgical colleagues and were also subject to operation by them. But these cases do not concern me, as they will report and draw their own conclusions, having in hand every detail of the history.

Cases requiring removal of the appendix in the course of other operations are not included in this list.

Of these thirty-two cases, twelve were the first attacks, so far as I was able to find out; of these twelve patients, four died. The others had from two to twenty or thirty attacks. Six of the remaining twenty were operated upon between attacks, leaving fourteen who had a number of attacks which were mild, but finally, with the second, fifth, tenth, or fifteenth attack, rupture took place. To this point I wish to call your especial attention—that although a number of mild attacks will subside by rest, etc., some time or another perforation and peritonitis will take place.

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* Read before the Monroe, Michigan, County Medical Society, April 4, 1897.

The following is the list of cases and the results:

Case.	Date.	Name.	Age.	Referred by.	Attacks.	Result.
1	Jan. 20	Wm. P.	45	Dr. Van der Velpen.	First.	Recovery.
2	“ 26	John S.	35	“ Dulitz.	Second.	Recovery.
3	“ 28	Edw. S.	36	“ Shulte.	Second.	Died.
4	Feb. 1	Mrs. N.	42	“ Sutherland.	Many.	Recovery.
5	Mar. 4	John H.	15	“ Dulitz.	First.	Recovery.
6	“ 10	Chas. F.	20	....	Ninth.	Recovery.
7	“ 14	Fred K.	17	Dr. Bonning.	Second.	Recovery.
8	“ 25	Herman K.	15	....	First.	Recovery.
9	May 2	Miss C.	24	Dr. Dickinson.	First.	Died.
10	“ 19	Miss W.	22	....	Fifth.	Recovery.
11	“ 23	Mr. K.	36	Dr. Austin.	First.	Recovery.
12	June 18	Mr. McC.	18	“ North.	Second.	Recovery.
13	“ 26	Anna L.	24	....	First.	Recovery.
14	July 2	Mrs. E.	30	....	First.	Recovery.
15	“ 4	Geo. E. S.	60	Dr. Wilson.	Many.	Recovery.
16	“ 15	C. McC.	24	“ Sickler.	Third.	Recovery.
17	“ 23	A. G.	29	“ Hubbard.	First.	Recovery.
18	“ 24	Mrs. C.	30	....	Several.	Recovery.
19	“ 26	Mrs. C.	24	Dr. Bennet.	First.	Died.
20	“ 28	Wm. H.	35	....	First.	Died.
21	Aug. 4	Hattie M.	7	Dr. Pulford.	Second.	Died.
22	“ 30	Mrs. K.	30	“ Sigel.	First.	Recovery.
23	“ 30	Mrs. B.	51	“ Murdie.	First.	Recovery.
24	Sept. 8	Mrs. B.	35	“ Steinbrecher.	Second.	Died.
25	“ 16	Sam N.	26	“ Hoare.	First.	Recovery.
26	Oct. 3	Wm. H.	15	“ Hyndman.	First.	Died.
27	“ 20	Wm. A.	27	“ Schell.	Third.	Recovery.
28	“ 24	John W.	21	“ Bonning.	First.	Recovery.
29	Nov. 11	Benj. R.	25	“ Bonning.	Second.	Recovery.
30	“ 15	Mrs. K.	42	“ Sigel.	12–15	Recovery.
31	“ 30	John D.	15	“ Cooper.	Second.	Died.
32	Dec. 14	E. H. J.	39	“ Cunningham.	Second.	Recovery.

Not wishing to burden you with a long history of each case, I will only pick out a few that seem to teach a particular point.

Case V.—Was that of a young boy who, in running, had fallen on a brick, which struck him right over the region of the appendix, evidently being the exciting cause of the attack. Perforation had taken place. He was operated upon and recovered.

Case XI.—A traveling man, who traveled three days around the State while having an attack. Perforation had taken place, but he recovered.

Case XIII was the most beautiful case of peritonitis that any one could ever see. The abdomen was extended and exquisitely tender. No tumor could be detected, nor the so-called McBurney point. The intense tenderness was universal, but, with my unbounded faith that peritonitis always is appendicitis, I put her under chloroform to relax the muscles, and then could find a well-marked swelling in the right inguinal region. I operated upon her and found a large pus collection back of the cæcum.

Case XXI was identical with this one.

Case XXX.—Mrs. K., aged forty-two years, had had so many attacks that she could not remember them—at least twenty-five or thirty. They were quite severe. She was confined to her bed for three or four days, and sometimes a week. Being a midwife and knowing a little about medicine, she soon learned that her physician generally gave her a cathartic, applied poultices, and gave her a few doses of morphine, so that, as a rule, she never called a physician. She always got over them nicely until, all at once, in her fifteenth attack, I would say, although it might have been the twentieth or twenty-fifth, ulceration and perforation took place—sepsis in the highest degree—but by prompt operation she was saved. This case beautifully shows that, no matter how many attacks a person may have, perforation may take place at any time.

Case XXXII was interesting, as the acute attacks were severe, and extensive adhesions required good drainage. He had been unable to do much for nearly a year. He had what is called relapsing appendicitis. He made a slow but good recovery.

A most interesting lesson is taught by the cases of the patients that died.

Case III.—The patient died, apparently from delirium tremens. This is the fourth or fifth case in which death occurred from that disease, not with men who are called drunkards in the ordinary sense of the word, but men who drink a good deal, keep steamed up all day, and if they have an attack of appendicitis they vomit, and for two, four, or five days are unable to take their quantity of alcohol, and certainly break out with delirium tremens. The septic condition probably contributes to it, and perhaps the anæsthetic has something to do with it. That kind of cases I always dread, not only for that reason, but also because they have not the power of resistance, and healing does not take place so readily.

Case IX was a sad one—that of a young lady who died from uræmic coma within thirty-six hours, evidently due to the anæsthetic (chloroform).

Case XVII was also very sad, as the operation was delayed to await the arrival of a relative. The temperature ran up to 104.5°, pulse 135. Temporary benefit followed operation, but in spite of good drainage the sepsis continued, and she died of heart failure.

Case XXI was a case for which I blame myself. This little girl had a mild second attack of forty-eight hours' duration. The temperature was around 100°, pulse 90, and all symptoms very mild when I saw her in consultation. It seemed to me that she was on the mend and could be operated upon later, when all acute symptoms had disappeared. She continued this way for forty-eight hours, when there was a sudden rise of temperature. I again saw her, diagnosticated perforation, and operated, but too late. The septic condition continued, and she died in thirty-six hours.

I have had such cases before, and call attention to them because the only safe way is to operate as soon as we diagnosticate the case, no matter how mild the symptoms. But we weaken; we come across these very mild cases, and we think this case will get along all right—we will not operate; or the parents object, or request delay for twenty-four hours, until their mother, brother, or some relative from the country comes—we weaken, we delay, and the result is the death of the patient. Sometimes we are cowards. It takes courage to practise abdominal surgery, and although I have repeatedly said that every case of appendicitis, as soon as diagnosticated, should be operated upon, in this case again I have failed to carry out my resolution. But it is the last time. From now on every patient shall be subject to an operation, and if he refuses, or the family physician insists on delay, I wash my hands of all responsibility.

CASE XXIV.—The patient had been sick for some days with mild symptoms, but suddenly became much worse, and I was called late at night. She was suffering from sepsis to an extreme degree, and in a kind of collapse. I suggested stimulating her, and perhaps an operation in the morning, but for various reasons it was delayed until evening, when I considered it almost useless, but gave her the only chance, and operated. She died about two hours later.

CASE XXVI was a very sad case of a bright young man. Perforation had taken place, and sepsis, the progress of which the operation seemed to have no effect in stopping. The patient simply faded away.

CASE XXXI.—A young boy, living in the country, was sick for ten days without any medical attendance; was emaciated and weak from improper nourishment before the attack. Although pus was evacuated he continued to sink, and died within twenty-four hours.

This list includes twelve females and twenty males, the ages varying from seven to sixty years. Some of the cases had so many attacks that they could not remember them.

These patients had altogether about one hundred different attacks, so that the general practitioners who treated them before had sixty-nine recoveries without a death, while I, with thirty-two, had eight patients die. I called attention to this point last year—that this would give the superficial observer the opportunity to say that medical treatment was far safer. It seems to me, however, that my cases show that perforation will take place some time, and then an operation is often too late. The patients who have had a number of attacks are liable to have a serious attack at any time. You might say there was absolutely no danger if they were operated upon in the intervals; that even in operating during the acute stage the danger was very little if you could get them early enough, and if they were patients with ordinary powers of resistance, and in ordinary good health.

My mortality is far too large, but I have not operated for a record, and have given the most desperate cases the only chance. Nearly all the cases were operated upon at the hospital, with every facility at hand; they took comparatively few minutes and were accompanied by very little shock, so that the operation itself, as far as I can see, contributed absolutely nothing toward the fatal issue. Simply the pus and the gangrenous appendix were removed. Great care was taken to prevent pus entering the abdominal cavity, thus preventing general infection, although in some cases there was no wall of adhesions formed. By refusing to operate in cases known to be desperate I could have had a far better showing, but even in some of the most desperate cases the patients recover, and I strongly adhere to the belief that every case, no matter how desperate it may seem, should receive the benefit of at least making an opening and letting out the pus.

I stated above that it was admitted that some patients would permanently recover without operative interference. In my experience, and from what I have heard and read on the subject, perhaps fifteen per cent. of them will have one attack only and remain perfectly well, while the others will have recurring attacks, and during every attack they are in danger. Is there one man, in the present state of our knowledge, who can say which case is one of the fifteen? I think not, and I am sure that if all these fifteen patients that recovered had been operated upon, they would have recovered just as well, and would forever have had removed the dread that they might have recurring attacks. The only excuse I see for not operating promptly is that the surroundings are so poor, or that no facilities are at hand to do the operation. In such a case you might wait until proper assistance could be had, or the patient be removed to better environments. These cases must always be few and far between, and I must reiterate the strong assertion made above, that every patient should be immediately subjected to an operation as soon as you have diagnosticated the trouble. I am told that people will not submit, but I can assure you they always will, with hardly an exception, although in the country it is more difficult to convince them. It depends altogether on how you put it to them. If the doctor who suggests an operation has some doubts of its need or propriety the people will soon catch on. But if he explains the thing to the people in its true light and shows the necessity, he will find that they will submit.

You will ask me about the diagnosis, and I can say that, as a rule, it is not difficult. Sudden onset of pain, often referred to the umbilicus or the stomach, accompanied by vomiting, not always; sometimes with diarrhœa or the opposite, and in the course of twenty-four hours the pain is localized in the right inguinal region, and generally the McBurney point is well marked. Fever gradually rises, often a degree a day, to 103° to 104°, and the pulse is increased to about 100. When the pulse rate increases rapidly to 110, 120, 130, or more, it is a more serious indication. All authorities agree that cases with slow pulse rates are not serious, even if the temperature is high, but as soon as the pulse gets over 110 only a prompt operation can save the patient. There is a great muscular rigidity over the region of the appendix.

It is astonishing how frequently physicians will diagnosticate appendicitis if they are only on the lookout for it. No matter what the abdominal trouble is, or whether your diagnosis is pus tubes, or gallstones, or renal calculi, or intussusception, or invagination, or typhoid fever, I would simply reiterate what I have said so often: In every acute abdominal trouble, no matter if it is in the old or the young, male or female, look again and see if it is not a case of appendicitis.

In summing up the results I will say:

1. Every patient with appendicitis should be promptly subjected to an operation when the diagnosis is made.
2. The only exception is when absolutely no facilities are at hand; but these should be produced and then the operation be performed.

3. In all mild cases in which the patients have had two attacks they should be operated upon in the interval, because (*a*) when they have had two attacks they will have more; (*b*) any future attack may be fatal.

4. Patients who have had only one mild attack can be watched, as it might be one of those cases which are without recurrence, but if a second attack develops the patient should be operated upon.

5. Experience shows that the earlier in the attack the operation is performed the better results can be obtained, the only exception being those rare cases of large abscesses which develop slowly.

THE ORIGIN OF URIC ACID:

ITS RELATION TO LEUCOCYTOSIS AND THE EFFECT OF THE INGESTION OF PROTONUCLEIN ON ITS ELIMINATION.

By A. M. DAVIS, M. D.,
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Having been recognized as a distinct compound by Scheele in 1776 and prepared synthetically in 1882, its origin and occurrence in the excreta in health and disease have been studied by Zalesky, Frerichs, Virchow, Meissner, and others. After a series of experiments upon birds, Minkowski and Meissner came to the conclusion that, in them, the liver plays an important part in the formation of uric acid, the latter further demonstrating that this organ was not responsible for its entire source in the economy. In mammals these experiments were not productive of similar results, for substances such as glycocoll, ammonium carbonate, and amido acids which, when injected into birds, increased the elimination of uric acid, caused in man a corresponding increase in the urea, while the uric acid was not altered in amount.

To Horbaczewski we are indebted for first having demonstrated that uric acid was derived from the nuclei of leucocytes or white blood-cells. In reviewing their physiology and morphologic changes Carter writes: * "They probably all originate as mononuclear cells, and the different morphological forms observed in the blood are only the same cells at different periods of their life history. . . . In examining fixed preparations and also in counting blood (especially in infections or any condition in which the leucocytes are being destroyed in considerable numbers), one constantly sees a great many multinuclear cells breaking up and liberating their granules and their nuclei."

An interesting fact may here be noted—namely, that in the infectious fevers (with the exception of measles, typhoid fever, and tuberculosis) uric acid and urea are invariably formed in excess. In seven specimens of typhoidal urine (taken from twenty-four hours' collection) examined by the writer, the urea was slightly increased in two, and greatly diminished in five.

Following a series of experiments, Carter concludes that "the infections show leucocytosis (with the exception of measles, typhoid fever, and tuberculosis), it being the most pronounced in pneumonia and diphtheria, the degree depending on the virulence of the infecting agent and the resistance of the animal economy."

He also found experimentally that the existence of simple pyrexia did not produce leucocytosis, thus showing the excess of uric acid in the infections to be due to some other cause than to a diminution in the alkalinity of the blood.

In some of the primary or essential anæmias also, an increase in the number of leucocytes and similarly an excess of uric acid occurs. In progressive or pernicious anæmia "the quantity of uric acid is generally acknowledged to be excessive" (Stengel), while in leucæmia (the disease characterized by hyperleucocytosis) uric acid and the xanthin bodies are habitually increased in amount, and, according to Fränkel, "a certain degree of relationship seems to exist between these substances and the fluctuations in the number of leucocytes."

In an article by W. Kuehnau,* based on a number of experiments, the author writes:

(*a*) In a series of diseases in which leucocytosis occurs, an increase in the uric-acid excretion is recognizable.

(*b*) The augmentation in the excretion of uric acid can not be caused by the fever alone, since it also occurs in diseases which run an apyrexial course—*i. e.*, cachectic leucocytosis.

(*c*) Rapid subsidence of a leucocytosis is accompanied by an increased excretion of urates.

(*d*) The experimental production of leucocytosis is associated with an increased excretion of urates; the latter attains its acme on disappearance of the leucocytosis.

(*e*) An increase in uric-acid excretion can be originated without the intervention of leucocytosis by the introduction of material containing leucocytes—*i. e.*, thymus suspension, aseptic pus.

(*f*) Injection of nuclein causes a direct increase in the excretion of urates. The synchronous appearance of leucocytosis can not alone be made responsible for the augmented urate excretion.

(*g*) The leucocytes are the principal, if not the exclusive, source of the formative materials of uric acid.

From the foregoing conclusions it would seem that the many physiological and pathological factors favoring an increase in the number of white cells (among them massage and cold baths, ingestion of large amounts of proteids or hydrocarbons, infectious diseases, inflammations of serous membranes, appendicitis, and the cachexias) directly increase the amount of uric acid in the economy; but, while this may be true, the fact remains evident that from the failure of its elimination (either from diminished secretion, altered alkalinity of the blood, suppression of urine, or other causes) various symptoms arise to which the retention of this substance in the blood is directly traceable. Thus Haig, in his treatise, demonstrated that uric acid produces (when in excess) migraine, mental depression, and fatigue, and that it bears a definite relation to asthma, bronchitis, epilepsy, convulsions, hysteria, and other abnormal conditions.

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* *University Medical Magazine*, October, 1894, p. 19.

* *Zeit. f. klin. Med.*, 1895, xxviii, Nos. 5 and 6, pp. 534–566.

Acting on this point of knowledge, various remedies have been exhibited from time to time for the purpose of increasing its elimination, among the more recent being that of nuclein. In a communication with Victor Vaughan upon this subject he asserts that "the administration of nuclein increases uric acid and the xanthin bodies," which is in accord with the statement of Horbaczewski, the discoverer of the origin of uric acid in the economy.

Having been unable, from lack of facilities, to experiment upon animals with nuclein obtained from spleen pulp, the writer, acting upon a suggestion of Dr. James Darrach, of Germantown, determined to note the effect of the ingestion of the commercial product known as protonuclein, and accordingly six grains were taken three times daily for a period of thirty days with the following results:

Before taking, uranalysis was as follows: Amount voided in twenty-four hours, forty ounces; reaction, strongly acid; specific gravity, 1.022; urates, greatly increased; phosphates, normal; chlorides, slightly diminished; uric acid, 1.12 per cent.

After having taken it a month, amount voided in twenty-four hours, thirty-two ounces; reaction, strongly acid; specific gravity, 1.024; urates, more abundant; phosphates, normal; chlorides, normal; uric acid, 0.75 per cent.

It will be noticed that the uranalysis showed, before the exhibition of the drug, a great excess of uric acid, which could only have been accounted for by the increased amount of nitrogenous diet taken during winter months (November), and by the irregular life and nervous strain common to all practitioners. There were absolutely no subjective symptoms of uric-acidæmia.

Following the exhibition of the protonuclein the uric acid amounted to 0.37 per cent. less than before taking, although still in excess of the quantity said to exist in normal urine.

In a case of neurasthenia the patient was treated with eighteen grains of protonuclein daily for a period of six weeks; the first two weeks of the treatment the quantity of uric acid increased from 0.75 per cent. to 0.87 per cent., but at the close of the month following the amount remained the same.

Although it would seem impossible to even approach a correct conclusion from these meagre experiments, yet they suggest a more thorough research upon this very interesting and practical subject, which would prove valuable not only in the possible discovery of new methods or remedies tending to increase the elimination of uric acid, but also in the detection of those that are worthless.

Therapeutical Notes.

The Treatment of Vomiting.—Pick (cited in the *Gazette hebdomadaire de médecine et de chirurgie* for May 30th) recommends the following formula:

℞	Menthol	¾ of a grain;
	Brandy	600 grains;
	Tincture of opium	150 "

M. S.: From ten to twenty drops several times a day.

A Pill for Tuberculous Cough.—Schoull (*Journal des praticiens*, June 5, 1897) recommends the following:

℞	Terpine	15 grains;
	Codeine, Extract of hyoscyamus, each	1½ grain;
	Extract of belladonna	¾ "
	Mass of cynoglossum	7½ grains.

M. Divide into ten pills. Four to be taken in the course of twenty-four hours, between meals.

Latham's Bromoform Mixture.—Apropos of Dr. Louis Fischer's case of bromoform poisoning (*Annals of Gynæcology and Pædiatry*, June, 1897; *New York Medical Journal*, June 19, 1897), Dr. Thomas Latham writes to us that in such a mixture as was prescribed by Dr. Fischer it takes but a few seconds for all the bromoform to fall to the bottom of the bottle. Dr. Latham's own prescription, which, he informs us, has been published in several medical and pharmaceutical journals, is the following:

℞	Bromoform	40 drops;
	Mucilage of gum arabic, Syrup of Tolu, each	7 drachms.

M. S.: Shake before using. A teaspoonful for a dose.

Subcutaneous Injections of Iodine in the Treatment of Albuminuria.—Dr. E. Boisson (*Journal de médecine de Paris*, June 6, 1897) remarks that some Italian and French physicians maintain that this treatment is beneficial. The following is Menella's formula:

℞	Iodine	3 grains;
	Potassium iodide	a sufficiency;
	Distilled water, enough to make 20 cubic centimetres.	

M. From one to two cubic centimetres to be injected in the course of a day.

Mousnier's formula is as follows:

℞	Iodine	1 drachm;
	Tannin	15 grains;
	Eucalyptol	600 "
	Sterilized oil, enough to make 100 cubic centimetres.	

M. This is of twice the strength of Menella's solution; consequently, the amount to be injected is from a half to one cubic centimetre.

Apiolin in Neurotic Dysmenorrhœa.—Dr. D. S. Maddox, of Marion, Ohio (*Medical and Surgical Reporter*, June 5, 1897), reports three cases in which the use of apiolin for three months, a capsule three times a day, gave entire relief. He thinks that sooner or later there is a neurotic element in all cases of dysmenorrhœa, and he says that of late he has come to rely on apiolin in cases in which there is no tangible pelvic lesion.

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THE DANGER OF THE VAGINAL INJECTION.

The case reported by Dr. Wells at a recent meeting of the Society of Alumni of the Charity Hospital—for by its old name we still prefer to call the hospital—which we print elsewhere in this issue, may well serve as the text for renewed cautionary remarks as to the danger of the self-administered vaginal injection. In this case a woman who had had a natural labor seventeen days before, and was at the time in a perfectly normal condition, save for a vaginal discharge observed by herself and a state of retroversion of the uterus discovered shortly afterward by Dr. Wells, took it into her head to administer to herself a vaginal douche. Accordingly, she filled a Davidson syringe with plain water, thrust the long rectal nozzle of the instrument into her vagina to the whole length, and squeezed the bulb forcibly. She was at once seized with severe abdominal pain and came very near going into a state of collapse. Having escaped the immediate danger, she suffered from a continuance of the pain, which extended up to the region of the diaphragm and was accompanied with tympanitic distention of the abdomen and a condition highly indicative of general peritonitis. Fortunately, the trouble was soon narrowed down to an inflammatory process seated in the pelvis and giving rise to a massive exudate—a state of things bad enough, to be sure, and tolerably certain to trouble her more or less for years to come, perhaps seriously, but not putting her life in immediate jeopardy. For a time Dr. Wells may well have been in doubt, as he says he was, as to whether he ought not to resort to abdominal section.

It seems quite probable, as Dr. Wells intimates, in view of the retroverted state of the uterus in this case, that the nozzle of the syringe was thrust into the uterine canal, possibly nearly to the fundus of the organ, and septic or at least irritating material forced through a Falloppian tube into the peritoneal cavity. It is stated in the account that the woman had had gonorrhœa some years before. The entrance of the nozzle into the uterus, perhaps carrying with it some infectious matter from the vagina, and certainly involving a flooding of the uterine cavity with water that in all probability was not free from septic material, furnishes an obvious and plausible explanation of the manner in which the pelvic inflammation was set up in the case under consideration, but such an occurrence does not by any means constitute the sole mishap of a vaginal injection improperly administered. In order that the injection may be forced into the uterus and through a Falloppian tube, it is not in the least necessary that the nozzle should enter the uterine canal, that one of its apertures should be so situated as to send a stream into the uterus, or that the organ should be retroverted; the one indispensable condition of safety is the provision of a free passage for the outflow of the fluid injected.

If a vaginal douche is to be employed during the puerperal period, says Dr. Wells, it should be given only by the physician or a thoroughly competent nurse. That is perfectly true, but, apart from the puerperal condition, danger always lurks in a vaginal injection administered without due precaution. How does the uninstructed woman usually proceed when she sets about giving herself a vaginal injection? She squats on some convenient utensil, thrusts in the nozzle, which is almost always of a kind utterly unfit for the purpose, and pumps rapidly, if the syringe is of the bulb type, so as to be over with the unpleasant affair as soon as may be, or hangs the bag high, if she is using an apparatus of the fountain type. In either case, if she has the good luck not to drive the nozzle into her uterus—and there is many a woman going about in tolerable health, so far as she knows, whose uterine orifice will readily admit an ordinary syringe nozzle—in either case, we repeat, she rather suddenly fills her vagina to repletion, even to distention, perhaps with a liquid that, whether by reason of its temperature or of something it holds in solution, may act as a stimulus to spasmodic contraction of the pelvic and perineal muscles. Fortunate is it for her if her vulvo-vaginal sphincter, although never designed to grasp so tiny an object, does not grip the nozzle so vigorously as to imprison the water under a pressure that is very apt to force it into the uterus. It is necessary very often to intrust women with the self-administration of vaginal injections—not, of course, in the lying-in period—and they should always be instructed how to guard against their dangers, and in particular they should be provided with a nozzle so constructed that no amount of contraction about its shank can close the vaginal outlet. Unfortunately, not one nozzle in a thousand is so constructed.

THE PREVALENCE OF RABIES IN LYONS.

It may not be wholly ridiculous to ask if geographical limits or climatic conditions or some analogous circumstances of environment have not something to do with the frequency or rarity of the occurrence of rabies in particular districts. Several years ago a San Francisco physician stated in this journal that the disease had never been observed in California. He supposed that persons who had been bitten by rabid animals must have gone to California, and he inferred that there was something in the climate of the Pacific coast that prevented the development of rabies, and that a person who had been inoculated with the virus might reasonably hope to escape the disease by hastening to California and remaining there.

Whether or not it is a fact that the Pacific slope enjoys this immunity, it seems to be established that one of the departments of France, that of the Rhone, is particularly afflicted with rabies. *Lyon médical* for May 30th, which reproduces certain statistics given in a recent number of the *Annales de l'Institut Pasteur*, states that during the year 1896 a hundred and thirty-five bitten persons were received at the institute from the department of the Rhone, while from several of the departments, such as those of the Cher, the Aube, the Ardennes, and the Haute-Saône, there was not one. Taking the average for the last ten years, says the writer, for every hundred thousand inhabitants, the department of the Rhone has sent a hundred and eighty-nine bitten persons to the institute, whereas one, three, four, five, six, seven, eight, and nine are the figures for eight other departments that he mentions.

As every phenomenon has a cause, says the writer, we may suppose that the carelessness of the municipality of late years has had something to do with the alarming prevalence of rabies in Lyons. He hopes that the activity and vigilance of the distinguished officer now in charge of the service of hygiene will put a stop to this deplorable state of things, but at present he can not feel sure of it, for, he remarks, it seems doubtful if a little medal hung to a dog's neck will prevent the animal from biting.

As regards the mortality statistics of the institute for the year 1896, of the 1,308 persons treated, only four died of rabies, making a mortality of less than a third of one per cent. That for the year 1895, while a little higher, was still not quite a third of one per cent. In 1886, 1887, and 1888 the mortality was twice and even three times as great. The statistician explains the improvement as due to the fact that bitten persons can now be subjected to treatment more promptly than before, owing to the establishment of similar institutes in other countries in which ready treatment is now afforded to patients who formerly had to consume several weeks in reaching Paris.

MINOR PARAGRAPHS.

ABDOMINAL PALPATION WITH THE PATIENT IN A WARM BATH.

Some five years ago, von Chlapowsky wrote in one of the German journals that abdominal palpation was rendered much more satisfactory by performing it while the patient was in a warm bath, and we gave our readers an account of his method at the time. Now, in the *Deutsche Medizinal-Zeitung* for May 24th, Dr. Schuster, of Bad Nauheim, corroborates von Chlapowsky's statements, and cites Fraenkel, Berkhan, Sée, and Lennhoff to the same purpose. Schuster attributes the facility of abdominal palpation with the patient in the bath to the fact that reflex muscular rigidity is reduced to the minimum. Among the conditions to which this diagnostic resource is applicable, he mentions enlargements of the stomach, intestine, liver, pancreas, kidneys, spleen, uterus, ovaries, and gall bladder; typhlitis, parametritis, perimetritis, peritonitis, subphrenic abscess, etc.; aneurysm of the descending aorta; and displacements of such organs as the liver, kidneys, and uterus. We can confirm the statements of these writers, but only with regard to external palpation; an attempt to introduce the finger into the rectum or vagina of a submerged patient is beset with difficulty, for the lubricant is washed away by the water, and, in addition, the sphincters seem to take upon themselves the rigidity of which the abdominal muscles have for the time being been robbed.

THE LENGTH OF THE INTESTINAL CANAL.

For the purpose of ascertaining to what extent sex, age, etc., exert an influence on the length of the intestinal canal, as well as the relation of the small to the large intestine, Dr. Paul Dreike (*Deutsche Zeitschrift für Chirurgie*, xl; *Deutsche Medizinal-Zeitung*, June 7, 1897) has made exact measurements on a hundred and sixty-nine dead Russians, and, comparing his observations with previous publications on the subject, has reached the following conclusions: In children, sex has no influence on the length of the intestine; among adults, the intestine of men is relatively longer than that of women. The intestine is proportionately longer in children than in adults. In proportion to the length of the small intestine, that of the large intestine is less in adults than in children. Pathological intestinal changes effect a noticeable elongation of the intestine in children. Persons who have died of phthisis or marasmus have a comparatively short intestine.

ALCOHOL AS A DISINFECTANT.

As the result of experiments made with purely bacteriological considerations in view, Dr. F. Epstein (*Zeitschrift für Hygiene und Infectionskrankheiten*, xxiv, 1; *Centralblatt für Chirurgie*, June 5, 1897) concludes that absolute alcohol has no disinfecting power whatever, but that diluted alcohol does act as a disinfectant. Of all purely spirituous liquids, he finds that alcohol of about fifty per cent. acts the best; if it is much stronger or much weaker, its disinfecting power is impaired. He finds also, with Koch, that certain antiseptics which are more or less efficient in a watery solution lose their efficiency when dissolved in strong alcohol; nevertheless, corrosive sublimate, carbol, lysol, and thymol act better when dissolved in fifty-per-cent. alcohol than in watery solutions of the same strength. He does not pretend to say how much value his experiments may have in actual practice, but he suggests that alcohol of from seventy to eighty per cent, will be found better for disinfecting the hands than, for example, Fürbringer's "Brennspiritus."

THE PROPOSED AMALGAMATION OF TWO MEDICAL SCHOOLS IN NEW YORK.

It is understood now that the plan recently announced for amalgamating the Bellevue Hospital Medical College and the Medical Department of New York University has fallen through. The differences between the two schools were found to be so many and of such a nature that the scheme proved impracticable. This is to be regretted; nevertheless, we can not doubt that each institution will by itself continue a creditable career.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 29, 1897:

DISEASES.	Week ending June 22.		Week ending June 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	4	9	3
Scarlet fever	179	14	186	12
Cerebro-spinal meningitis	4	0	0	0
Measles	228	8	248	7
Diphtheria	261	41	263	31
Croup	11	4	9	2
Tuberculosis	140	113	177	100

The Study of the American Medicinal Flora.—The subcommission of the Pan-American Medical Congress appointed to study the medicinal plants of the United States has entered into an association with the Smithsonian Institution for that purpose. The attention of our readers is called to the respective circulars issued by these organizations, which we print below.

SMITHSONIAN INSTITUTION, WASHINGTON, D. C., *May 28, 1897.*

DEAR SIR: The Smithsonian Institution has undertaken to bring together all possible material bearing on the medicinal uses of plants in the United States. Arrangements have been made with a body representing the Pan-American Medical Congress, the subcommission on the medicinal flora of the United States, to elaborate a report on this subject, and the material when received will be turned over to them for investigation.

The accompanying detailed instructions relative to specimens and notes have been prepared by the subcommission. All packages and correspondence should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside, *Medicinal Plants, for the United States National Museum.*

Franks which will carry specimens, when of suitable size, together with descriptions and notes, free of postage through the mails will be forwarded upon application. Should an object be too large for transmission by mail, the sender is requested, before shipping it, to notify the institution, in order that a proper authorization for its shipment may be made out. Respectfully,

[Signed.] S. P. LANGLEY, *Secretary.*

Instructions Relative to Medicinal Plants.—The Pan-American Medical Congress, at its meeting held in the city of Mexico in November, 1896, took steps to institute a systematic study of the American medicinal flora, through the medium of a general commission, and of special subcommissions, the latter to be organized in the several countries. The subcommission for the United States has been formed and consists of Dr. Valery Havard, of the army, chairman; Mr. Frederick V. Coville, botanist of the Department of Agriculture; Dr. C. F. Millspaugh, curator of the botanical department of the Field Columbian Museum, Chicago; Dr. Charles Mohr, State botanist of Alabama; Dr. W. P. Wilson, director of the Philadelphia Commercial Museums, and Professor H. H. Rusby, of the New York College of Pharmacy. This subcommission solicits information concerning the medicinal plants of the United States from every one in a position to accord it. The principal points of study are as follows:

1. Local names.
2. Local uses, together with historical facts.
3. Geographical distribution and degree of abundance in the wild state.
4. Is the plant collected for market, and if so,
    (*a*) At what season of the year?
    (*b*) To how great an extent?
    (*c*) How prepared for market?
    (*d*) What is the effect of such collection upon the wild supply?
    (*e*) What price does it bring?
    (*f*) Is the industry profitable?
5. Is the plant, or has it ever been, cultivated? If so, give all information on the subject, particularly as to whether such supplies are of superior quality, and whether the industry has proved profitable.
6. If not cultivated, present facts concerning the life history of the plant which might aid in determining methods of cultivation.
7. Is the drug subjected to substitution or adulteration? If so, give information as to the plants used for this purpose.

While it is not expected that many persons will be able to contribute information on all these points concerning any plant, it is hoped that a large number of persons will be willing to communicate such partial knowledge as they possess.

It is not the important or standard drugs alone concerning which information is sought. The subcommission desires to compile a complete list of the plants which have been used medicinally, however trivial such use may be. It also desires to collect all obtainable information—historical, scientific, and economic—concerning our native and naturalized plants of this class, and, to that end, invites the cooperation of all persons interested. Poisonous plants of all kinds come within the scope of our inquiry, whether producing dangerous symptoms in man, or simply skin inflammation, or, like "loco weeds," deleterious to horses, cattle, and sheep. In this respect, the general reputation of a plant is not so much desired as the particulars of cases of poisoning actually seen or heard about from reliable observers. It is believed that much interesting knowledge can be obtained from Indians, Mexicans, and half-breeds, and that, consequently, Indian agencies and reservations are particularly favorable fields for our investigation. Such knowledge will be most acceptable when based upon known facts or experiments.

In order to assist in the study of the habits, properties, and uses of medicinal plants, the subcommission undertakes to furnish the name of any plant specimen received, together with any desired information available.

Owing to the diversity in the common names of many plants, it will be necessary for reports, when not furnished by botanists or others qualified to state the botanical names with certainty, to accompany the same with some specimen of the plant sufficient for its identification. While the subcommission will endeavor to determine the plant from any portion of it which may be sent, it should be appreciated that the labor of identification is very greatly decreased, and its usefulness increased, by the possession of complete material—that is, leaf, flower, and fruit, and, in the case of small plants, the underground portion also. It is best to dry such specimens thoroughly, in a flat condition under pressure, before mailing. While any convenient means for accomplishing this result may be employed, the following procedure is recommended: Select a flowering or fruiting branch, as the case may be, which when pressed shall not exceed sixteen inches in length by ten inches in width. If the plant is an herb two or three feet high, it may be doubled to bring it within these measurements. If it possesses root leaves, some of these should be included. Lay the specimen flat in a fold of newspaper and place this in a pile of newspapers, carpet felting, or some other form of paper which readily absorbs moisture, and place the pile in a dry place under a pressure of about twenty to thirty pounds—sufficient to keep the leaves from wrinkling as they dry. If a number of specimens are pressed at the same time, each is to be separated from the others by three or four folded newspapers or an equivalent in other kinds of paper. In from twelve to twenty-four hours these papers will be found saturated with the absorbed moisture, and the fold containing the specimen should be transferred to dry ones. This change should be repeated for from two to five days, according to the state of the weather, the place where the drying is done, the fleshiness of the specimens, etc. The best way to secure the required pressure is by means of a pair of strong straps, though weights will do. The best place for drying is beside a hot kitchen range. When dry, the specimens should be mailed between cardboards or some other light but stiff material which will not bend in transit.

It is a most important matter that the name and address of the sender should be attached to the package, and that the specimens, if more than one, should be numbered, the sender retaining also specimens bearing the same number to facilitate any correspondence which may follow. The subcommission requests that, so far as practicable, all plants sent be represented by at least four specimens.

[Signed.] H. H. Rusby, M. D.,
Chairman of the General Commission, New York College of Pharmacy.
Valery Havard, M. D.,
Chairman of the Subcommission, Fort Slocum, David's Island, New York.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague during the week ending June 26, 1897, have been received in the office of the supervising surgeon-general:

Small-pox—United States.

Toledo, Ohio	May 1–31	11 cases,	2 deaths.
Memphis, Tenn	May 1–31	7 "	
" "	June 12–19	5 "	
Pensacola, Fla	June 12–19	1 case of varioloid.	
New York, N. Y	June 12–19		3 "
Gloucester, Mass	June 12–19		1 death.
Cambridge, Mass	June 12–19		1 "
Brooklyn, N. Y	June 12–19	2 cases.	

Small-pox—Foreign.

London, England	May 30–June 5	4 cases.	
Gibraltar	May 31–June 6	2 "	
St. Petersburg, Russia	May 30–June 5	14 "	2 deaths.
Odessa, Russia	May 22–June 5	9 "	5 "
Moscow, Russia	May 15–22	1 case.	
Rio de Janeiro, Brazil	May 8–29	3 cases.	
Habana, Cuba	June 10–17	30 "	3 "
Sagua la Grande, Cuba	June 5–12	80 "	
Warsaw, Russia	May 30–June 5		4 "
Alexandria, Egypt	May 14–20		4 "
Cairo, Egypt	May 14–20		3 "
Bombay, India	May 18–25		2 "
Paris, France	May 31–June 5		1 death.
Osaka and Hiogo, Japan	May 15–22	5 "	
Rio Grande do Sul, Brazil	March 27–May 1	6 "	4 deaths.
Yokohama, Japan	May 1–20	5 "	1 death.
Vera Cruz, Mexico	June 3–10		1 "
Nagasaki, Japan	May 18–25	2 "	12 deaths.
Madras, India	May 8–14		4 "
Calcutta, India	May 8–15		4 "

Cholera.

Bombay, India	May 18–25		4 deaths.
Calcutta, India	May 8–15		69 "

Yellow Fever.

Rio de Janeiro, Brazil	May 8–29	29 cases,	14 deaths.
Habana, Cuba	June 10–17–25	1 case,	40 deaths.
Sagua la Grande, Cuba	June 5–12	24 cases.	
Cardenas, Cuba	June 5–12	3 "	

Plague.

Bombay, India	May 18–25		56 deaths.

The Didama Jubilee.—On Wednesday evening, June 9th, a dinner was given in Syracuse in commemoration of the completion of fifty years of practice by Henry D. Didama, M. D., LL. D., dean of the College of Medicine of Syracuse University. Dr. Nathan Jacobson was toastmaster. The speakers were Dr. E. D. Ferguson, of Troy; Chancellor James R. Day, S. T. D., of Syracuse; Dean James B. Brooks, of Syracuse; Dr. A. Vander Veer, of Albany; Dr. Matthew D. Mann, of Buffalo; the Rev. George B. Spalding, of Syracuse; Dr. William S. Ely, of Rochester; Dr. Robert L. Morgan, of Syracuse; Dr. Brace W. Loomis, of Syracuse; the Hon. Frank Hiscock, of Syracuse; Dr. Henry O. Marcy, of Boston; the Hon. Carroll E. Smith, of Syracuse; and Dr. John Van Duyn, of Syracuse.

An Army Medical Board will be in session in Washington City, D. C., during October, 1897, for the examination of candidates for appointment to the medical corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War before September 1, 1897, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance from at least two reputable persons as to citizenship, character, and habits. The candidate must be between twenty-two and twenty-nine years of age and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning November 1, 1897. Further information regarding the examinations may be obtained by addressing the Surgeon General, United States Army, Washington, D. C.

Colorado's Contribution to the Rush Monument Fund.—Colorado has already fulfilled the pledge for $2,000 as a contribution to the Rush Monument fund, made by Dr. Graham at the meeting of the American Medical Association in Philadelphia. At the meeting of the State medical society, on June 15th, the full sum pledged by Dr. Graham was immediately raised by individual subscriptions offered most generously and with great enthusiasm.

The Late Dr. William T. Lusk.—At a meeting of the medical board of St. Vincent's Hospital, held on the 14th of June, 1897, to take action on the death of Dr. William T. Lusk, it was resolved to give expression to the deep sorrow of the members of the board at the death of one who had labored so long and so well for the institution and for its inmates, and of a colleague who, by his courtesy and geniality, had won the high esteem of his associates.

It was further resolved to express to the family of the deceased the condolence of the members of the board, and to forward a copy of the record of this action to the medical journals.

Changes of Address.—Dr. Joseph Baum (for the summer), to the Atlantic Park Hotel, Arverne, Long Island, N. Y.; Dr. W. Whitehead Gilfillan, to No. 24 West Fifty-ninth Street, New York; Dr. William A. Hammond (from June 1st to October 31st—residence during the rest of the year in Washington), to the Hotel Manhattan, Forty-second Street and Madison Avenue, New York; Dr. Alfred Michel, to No. 357 West Thirtieth Street, New York; Dr. Sinclair Tousey, to No. 151 West Seventy-sixth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 13 to June 26, 1897:*

Shannon, William C., Major and Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension of one month. Jackson Barracks, Louisiana.

LIPPITT, WILLIAM F., Jr., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about July 24, 1897. Fort Leavenworth, Kansas.

LYNCH, CHARLES, First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month, to take effect upon his relief from duty at Fort Robinson, Nebraska.

BROOKE, BENJAMIN, First Lieutenant and Assistant Surgeon, is granted leave of absence for four months on surgeon's certificate of disability. Fort Thomas, Kentucky.

FORWOOD, WILLIAM H., Colonel and Assistant Surgeon General, is granted leave of absence for three months, to take effect about July 1st, with permission to go beyond sea.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending June 26, 1897:*

DERR, E. Z., Surgeon. Ordered to duty with the new Naval Rendezvous, New York.

GROVE, W. B., Assistant Surgeon. Ordered to the Naval Laboratory, New York. June 21st.

SPRATLING, L. W., Passed Assistant Surgeon. Ordered to the Naval Hospital, Norfolk. July 1st.

STEPHENSON, F. B., Surgeon. Detached from the U. S. Steamer Wabash, June 24th, and ordered to the Marine Rendezvous, Boston.

URIE, J. F., Passed Assistant Surgeon. Detached from the Marine Rendezvous, Boston, June 24th, and ordered to the U. S. Steamer Wabash.

WILSON, G. B., Passed Assistant Surgeon. Detached from the Yantic, ordered home, and granted two months leave.

Births, Marriages, and Deaths.

Married.

BODENBENDER—MARTIN.—In Buffalo, on Wednesday June 16th, Dr. Edward G. Bodenbender and Miss Mercy A. Martin.

FITZSIMMONS—DEAN.—In Pawnee City, Nebraska, on Wednesday, June 9th, Dr. A. P. Fitzsimmons, of Tecumseh, Nebraska, and Miss Clara Dean.

HAAS—ROOS.—In Opelousas, Louisiana, on Wednesday, June 16th, Dr. John A. Haas and Miss Jeannette Roos.

SCHELL—SOMERVILLE.—In Kingston, Canada, on Tuesday, June 15th, Dr. Luke Ellsworth Schell, of Detroit, and Miss Ethel Mary Somerville.

WOODS — KILBOURNE. — In Clinton, Louisiana, on Wednesday, June 23d, Dr. T. O. Woods, of Woodville, Mississippi, and Miss Almena Kilbourne.

Died.

CAVANAUGH.—In Easton, Pennsylvania, on Thursday, June 24th, Dr. James Cavanaugh, in the sixty-eighth year of his age.

Letters to the Editor.

THE TREATMENT OF VIRULENT URETHRITIS.

ANN ARBOR, MICH., *June 4, 1897.*

To the Editor of the New York Medical Journal:

SIR: I desire to direct attention briefly to the so-called Janet treatment of gonorrhœa, which, as is well known, consists in repeated irrigation of the urethra with a hot solution of potassium permanganate in increasing strength. The solution, placed in a suitable receptacle, is elevated about ten feet above the patient, and with a rubber tube to which is attached a blunt nozzle the fluid is passed into the urethra, which is supposed to be "ballooned out" by the pressure and hence thoroughly irrigated.

I desire to say that my experience has been rather at variance with that of Valentine and others who are advocating this treatment. I have found that in many cases this so-called "ballooning out" of the urethra does not take place under the degree of pressure advised by the authors. I am convinced that in many cases the fluid is returned after passing not more than two inches into the canal, much less into the bladder. There is no doubt that urethral irrigation with a hot potassium-permanganate solution is good treatment and successful in many cases. But cases of ordinary urethral inflammation occur in which this treatment fails absolutely, and experience has led me to believe that cases of gonorrhœa occur in which *any and every* form of treatment will fail. A mere glance at the pathological anatomy of the disease when it invades other regions than the urethra, such as the seminal vesicles and the ejaculatory ducts, will convince one of the extreme difficulty of successful treatment. Repeated microscopical examinations of the bacteriological elements found in *Tripperfaden* from cases of five and six years' standing convince me of the truth of these assertions.

In my last twenty cases zinc permanganate (Merck) was substituted for the potassium salt, and I am led to believe the results were more speedy than with the potassium treatment. I believe also that many physicians who are using these remedies in tablet form hold their patients too long upon the use of weak solutions, while results are sooner obtained by passing rapidly to the more concentrated ones.

In cases where the Janet method has not succeeded well I have had good results in urethral irrigation with an ordinary hydrocele injector and a soft-rubber catheter. The catheter, placed in the meatus, should be "flooded" in with the advancing fluid well beyond the disease limits if possible, and held in place while the irrigation continues.

J. A. WESSINGER, M. D.

A MONSTROSITY.

TEXARKANA, TEXAS, *June 7, 1897.*

To the Editor of the New York Medical Journal:

SIR: A short while ago I was hastily summoned to see a patient who was undergoing a premature labor.

The patient had suffered from an attack of eclampsia some two hours prior to my arrival at her bedside.

Upon examination, I found a breech presentation, with pains virtually absent.

I gave chloral with the hope of cutting short any further trouble from eclampsia. I then proceeded with the delivery in the ordinary manner. The fœtus, which had developed to about the eighth month, was well formed in all its extremities, but there were no nasal organs whatever, and there was only a very miniature buccal orifice, or rather an impression for the orifice, measuring half an inch in length, about two lines in width, and the same in depth.

The organ of sight was a single large eye set in the forehead about an inch and a half above this impression.

M. E. STEVENS, M. D.

THE DIET IN TUBERCULOUS DISEASE.

New York, *June 8, 1897.*

To the Editor of the New York Medical Journal:

Sir: I have read the article on Proper Feeding the Most Important Part of Treatment in Chronic Tuberculosis of the Lungs, by Dr. Achilles Rose, with great pleasure for its breezy frankness and its progressiveness. It must be always gratifying to the plodding, earnest truth-seeker to find other minds catching glimpses of new light, new facts, new methods, and having personal confidence and aggressive individuality enough to boldly declare their convictions, that the medical profession and humanity at large may be mutually benefited. In 1894 I read a paper on the Dietetic Treatment of Consumption, and again, in 1895, one on Diet and Systematic Muscular Exercise in the Treatment of Tuberculosis, and I remember that Dr. Achilles Rose kindly participated in the discussion. These papers enlarged upon the method which he speaks of as being now employed in Germany in the Black Forest and on the Rhine, and I have constantly used it since with steadily increasing knowledge of its efficacy and gratifying results. It has always been difficult for the profession to break away from old habits, and slow conservatism has been a stumbling-block and a barrier to the wheels of progress. But truth can not be suppressed or the light of revelation be checked and impeded, and it is indeed a source of sincere pleasure to find that many physicians are becoming bold and manly enough to express the faith that is in them, and to voice it with no uncertain sound. When Dr. Rose says, "In reading Schröder's and similar reports of the results of treatment in sanatoria on the other side of the Atlantic, I am delighted to find benefit for myself which will benefit my patients; I am delighted to be spared the reading about bacilli and tuberculin in useless repetition," he speaks for the progressive men of the profession, and I honor him for his frankness and sincerity, as one who shares with him "that tired feeling," for within the past few days I have received by mail more notices of specifics which are supposed to kill the bacillus.

T. J. McGillicuddy, M. D.

A NEW METHOD OF FINDING BULLETS AND OTHER FOREIGN BODIES.

Gloucester, Massachusetts, *June 26, 1897.*

To the Editor of the New York Medical Journal:

Sir: The finding of needles, pieces of glass, bullets, and other foreign bodies in recent wounds is greatly facilitated by slipping one end of a flexible rubber tube over the probe and holding it by pinching the tube together with the thumb and finger, while the other end, armed with a hard-rubber ear tip, such as is used with the phonendoscope, is placed in the ear. In probing a wound, when a hard substance is struck or rubbed, a louder and higher-pitched sound is communicated to the eardrum by the vibration of the air in the tube. The effect is intensified by using a y-shaped tube with a branch extending to each ear; but with two single tubes, such as are furnished with the phonendoscope, the end of the second tube being held firmly against that of the one containing the probe or metallic knife handle, all extraneous noises are excluded and the sounds communicated to both ears. The same means will probably be found useful in exploring for stone in the bladder, carious bone, etc. Thomas Conant, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of April 7, 1897.

The President, Dr. Brooks H. Wells, in the Chair.

Ulcerating Nævus of the Lip in a Child, producing Harelip. Spontaneous Cure.—Dr. W. J. Brandt presented a case of this kind. (See vol. lxv, page 828.)

Dr. A. Rupp said the case was certainly unique from the fact that the lip had divided spontaneously without any hæmorrhage, and then united again. Authorities told us that these tumors only exceptionally disappeared spontaneously. In this particular case he would cauterize deeply with fine needles from the centre to periphery. He spoke of a case he had treated which involved part of the upper lip and extended into the nose slightly. The growth was not deep, and measured a quarter of an inch by an inch and a half.

Dr. A. C. Bridges asked if it was not a tumor to begin with. It seemed to be of the vascular variety, but the deeper part felt cavernous.

Dr. E. Pierre Mallett asked as to whether, by doing plastic work, there was any chance of making the lip present a decent appearance. Of course, in a boy having a moustache, it would not make any difference.

Dr. Brandt said that at the time of the birth of the child it had been the most superficial thing imaginable. After the twelfth day it grew enormously. There was no resemblance between the child now and when it was born.

Dr. R. W. Taylor said there was a great deal of talk nowadays about electrolysis and electricity for such cases; but he remembered that his preceptor, the late Dr. Parker, used to have a cobbler's awl which he would heat to a dull red and then introduce into the tumor. He produced some of the most extraordinary results, and the speaker had not seen any better results by the new method. He had used this method himself, and had an abiding faith in it.

Dr. John L. Andrews said he had seen two or three cases treated within the last year and a half in that very manner. It was not always possible to attack them from the inside, because the tumor was nearer the skin than it was to the mucous membrane, but this was a very common method nowadays.

A Fatal Case of Pemphigus.—Dr. A. C. Bridges reported a case of this kind. (See vol. lxv, p. 859.)

Dr. D. E. Walker said he had seen a number of cases in Charity, but not since. It seemed to be agreed among most writers that there was some obscurity about the ætiology of the disease. Some thought it due to the general condition, which was the opinion of the speaker. He wondered if in some of these cases climatic change would not be a good thing. Of course, in an acute case like the one reported, there was not a chance to give it a trial. He had never seen a fatal case of pemphigus.

Dr. A. Rupp said he had not seen a fatal case of pemphigus, and that nearly all the cases of pemphigus he had seen had been in Charity Hospital. Judging by the general condition of the patients he had seen there, and comparing them generally with patients suffering from other acute and chronic skin diseases, he found it difficult to say to what extent particular constitutional conditions were concerned in giving rise to or influencing pemphigus. Possibly, as in Dr. Bridges's case, secondary chemical and neurotic changes gave rise to depression and depressed local conditions. In all these cases there must be something back of the mere local processes. It was an easy matter in almost any surface disease to find bacteria of some kind. He asked if bacteriological examinations had been made in this case.

Dr. Bridges said they had not.

The President asked if the denudation of such a large portion of the skin would not almost necessarily be fatal, as a slight burn that extended over a very large part of the body was.

Dr. Taylor said there was a great deal more in pemphigus than some dermatologists had discovered in it. His reading about pemphigus in some dermatological books showed him very clearly that many dermatologists never in their cogitations got further than skin deep. The late Dr. Burchard had a nephew who, as a child, had pneumonia, and afterward he broke out with pemphigus. The pemphigus bullæ in this case were peculiar in that the serum was absorbed and left fibrinous coagula. The child had pneumonia and broke out with pemphigus afterward. In all probability the eruption of the skin was due to some septic processes incident to the breaking up of the pneumonia. There was a hiatus in the history of the case reported by Dr. Bridges in that there was no autopsy. He thought the man must have been poorly nourished, being a malformed fellow, having a chronic ulcer, and having had an amputation. It seemed in a case like that as if there was some poison working in the man's system, making him sick and acting upon the nervous system, producing this continual formation of bullæ. His attention had been first called to the obscurity of pemphigus by his noticing that some of the acute cases of pemphigus had many points of resemblance to urticaria. He spoke of having years before seen a woman who kept a baker's shop and never went out, who was covered with watery bullæ. The history in her case, it turned out, was that she never took any exercise, rarely going beyond her own threshold. She drank a good deal of beer, she had chronic nephritis, her urine was very scanty, and she had great stomach trouble with acid eructations. There undoubtedly was in her system, as a result of her condition and her overeating and overdrinking, the circulation of some poisons that brought out the pemphigus. Now, if anything was clearly established, it was that urticaria was due to some noxious matter in the system producing an influence upon the nervous system which was then reflected out upon the skin. The speaker thought that pemphigus was due to the same cause in some cases.

Dr. Bridges said that when he first saw the few vesicles in the case he did not know what it was. He saw a very few on both lower limbs. It was on account of the eczema that he gave the treatment. In regard to the treatment, it was impossible here to carry out a water-bath treatment, the fellow could not be transported to a hospital. The speaker tried powdered starch. The patient kept it on one day and it was distressing. It dried things up so that one could not tell what there was. At the suggestion of Dr. Elliott, he used lint saturated with Carron oil and ichthyol, six per cent. solution. He found this remedy good in other ulcerating and sloughing surfaces. In this case it would look as if the operation had had something to do with the cause of the trouble. The man's condition had not been altogether good beforehand, because he had an ulcer that kept him very weak. He had been trying for several years to have it healed, and the speaker had advised an operation. It was performed and the wound healed satisfactorily, and he had no further trouble until these little vesicles appeared. There were no vesicles at that time appearing on the lower surface of the stump. The speaker had read what he could find on pemphigus, and must admit that, while he had defined the different varieties perhaps as clearly as he could make out from the books, still the matter was not very clear to him. Dr. Elliott saw the case in consultation about the 15th of December, and he pronounced it a case of pemphigus vulgaris. Of course, the treatment had had something to do with this, obscuring to some extent the condition of the skin, and perhaps on that account he could not judge fully what was going on upon the skin. The surface was reddened and part of the time it was weeping, and, of course, it was colored, and the application of the oil seemed to dry it up, but by renewed applications it was kept fairly moist, and it seemed to the speaker as if the condition was not that of pemphigus vulgaris, but more like the foliaceous variety.

A Case of Mistaken Diagnosis.—Dr. A. Rupp said that recently a girl sixteen years of age, an orphan, was brought to his office by her foster-mother. Another physician had been treating her for nearly two weeks, and then decided that she was suffering from typhoid fever. The girl could not be treated at home, and she was referred to and admitted into the medical wards of the New York Hospital. Before she entered the hospital her temperature was 102.5° F. After she had remained a day or two in a medical ward, it was decided that she did not have typhoid fever. In a surgical ward the diagnosis of appendicular inflammation was made, and an operation was decided on and proposed to the girl's friends; but these people wished Dr. Rupp to decide, or agree to an operation, first. All the so-called rational symptoms spoke in favor of typhoid fever. One member of the family had just recovered from typhoid fever, and the onset of the malady had been gradual. There had been no symptoms pointing to inflammation of the appendix. At the hospital it was thought that such an inflammation, of a slowly developing, subacute type, was the cause of the fever. Dr. Hartley waited two days after the operation was first proposed, and, finding that the temperature remained at between 102° and 104°, and apparently finding the signs of fluctuation and enlargement in the right iliac region becoming aggravated, although without any rational symptoms pointing to this region, operated. He did not find a diseased appendix. Dr. Hartley wrote to the speaker: "I found a retroperitoneal cellulitis with enlarged glands along the inferior vena cava. This cellulitis surrounded the kidney, ureter, and inferior vena cava. The appendix, ileum, and colon were uninvolved. The peritoneal cavity contained a quantity of serous fluid. No pus. The right kidney was displaced; its capsule was three quarters of an inch thick, due to the perirenal cellulitis. The kidney itself did not seem involved, though the ureter apparently was. The opposite kidney was normal, the spleen not enlarged, liver normal."

The child after operation was now doing well. This case demonstrated the advantage surgeons had over physicians; when physicians misdiagnosticated, surgeons might do so too, but the latter had the privilege of correcting such errors on opening the cavity in which they were hidden. The surgeon had not communicated the nature or extent of his operations. He had probably removed the right kidney and the enlarged abdominal glands.

Dr. Bridges spoke of a case of appendicular inflammation that he had seen three years before. It was a case of peritonitis when he first saw it. The patient was taken sick with pains in the abdomen, and when the speaker saw him he diagnosticated general peritonitis. There was one symptom that puzzled him, and that was the condition of the bladder. It was almost impossible for the patient to make water, and the symptoms simulated those of stone of the bladder so closely that the speaker passed a stone-searcher, but did not find anything. The case was cleared up at the autopsy, when he found a rupture of the appendix, but very little inflammation of the appendix itself. He found also an inflammation extending around the bladder, and it was on this account that the patient had been unable to make water.

Dr. Walker said that in a case of appendicular inflammation of that kind, where there was general peritonitis, the simple fact of the man having peritonitis prevented his making an effort to pass water; just as after operations patients might be unable to pass water because of the pain and the inability to make any effort without pain.

Peritonitis following a Vaginal Douche.—The President spoke of a case of this kind. Six weeks before, when he was out of town, a patient of his had been delivered. Her labor was perfectly normal and her convalescence was normal for seventeen days. She had no elevation of temperature. The speaker called on her on his return to town, and found her condition perfectly normal. The next day she thought she would take a vaginal douche on her own account. She filled a basin with hot water and inserted the long rectal tube of a Davidson syringe the whole length into the vagina, as she supposed, and squeezed the bulb forcibly. She was taken at once with very severe pain and went almost into collapse. The speaker saw her the next day and found quite threatening symptoms of general peritonitis. She lay on her back with her knees drawn up, the facies was anxious, and the abdomen was very tender and tympanitic. She complained particularly of pain around the region of the diaphragm. Her pulse was 104, very wiry and tense, a typical peritonitis pulse. The temperature was 99.5° F. He thought it a case of peritonitis which might be due to the injection of fluid through one of the Falloppian tubes or possibly to a perforation of the fundus uteri. On making a vaginal examination, he found the uterus retroverted and in such a position that she could hardly have helped passing the tube into it. As a number of these cases had been reported, and several with a fatal ending from general purulent peritonitis, the question was, whether he should do laparotomy and drain the abdominal cavity, or let her alone. He decided to wait, gave her a hypodermic injection of a quarter of a grain of morphine, put a good nurse in charge, and saw her again five hours later. At that time she had a temperature of 103°; but across the lower part of the abdomen there was a distinct area of hardness, indicating a localization of the infection, and the pelvis was filled with a mass of exudate. The next morning the severe pain which she had complained of had nearly disappeared. The peritonitic area became well defined across the lower part of the abdomen. Within a week the temperature became normal. There was still a big mass of exudate, but it was sinking rapidly and the patient was doing well. The case was of interest as showing the great danger that might come from the careless use of a vaginal douche. During the puerperal period, if a vaginal douche was to be employed, it should be given only by a physician or by a thoroughly competent nurse.

Dr. Alvah M. Newman asked what had been used in the douche.

The President said that plain water had been used.

Dr. Newman said he did not see how the patient could get the tube into the uterus on the seventeenth day after confinement if the body of the organ was in a good state of involution and in a normal position. If the tube was so easily introduced, then the uterus could not have been well advanced in involution and in a normal position, but must have been in a condition of subinvolution and in the first degree of retroversion, making the uterine axis the same as that of the vagina. Furthermore, he did not believe that water injected into the uterus and passing through the Falloppian tube into the peritoneal cavity would cause such a violent attack of peritonitis within a few hours as to bring up the question of abdominal section to save the patient's life, or cause inflammatory masses in either of the parametria. There must have been previous infection. At the Maternity Hospital, in the service of Dr. Coe, while giving a bichloride-of-mercury intra-uterine douche for septic infection, he had twice known the fluid to pass into the peritoneal cavity on successive days, causing sharp abdominal pain which lasted for about an hour after morphine had been given, but in no way increased the gravity of the patient's condition.

The President said that the patient had a vaginal discharge and it was perfectly easy to carry it back into the uterus. He had not mentioned that she had had a gonorrhœal infection some years before which might have predisposed to the trouble.

Dr. Walker thought the character of the discharge from the vagina ought to be taken into consideration, as to whether an operation was advisable. If an operation was done in a case like that, it would probably be better to open through the vagina and wash out in that way, afterward draining by the same route.

Dr. Brandt asked what sort of tube had been used.

The President said that it was a small tube, and had been used before.

Dr. Brandt said that he had seen cases where the uterus was injected on purpose. Morphine would cure those cases—the larger the dose the better.

(To be concluded.)

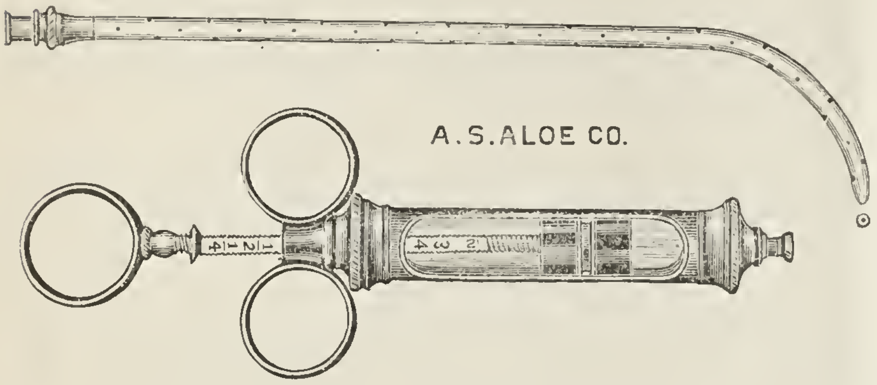
New Inventions, etc.

A NEW METHOD OF TREATMENT FOR THE RAPID CURE OF GONORRHŒA.

By Joseph A. Silverman, Ph. G., M. D.,
BUTTE, MONTANA.

So many articles have been written, so many instruments devised, and so many drugs and chemicals recommended purporting to effect the rapid cure of gonorrhœa, all of which have been taken up in turn and tried, some successfully, others with less success, that many will be inclined to pass this article by, thinking it a waste of time to read it, but after an experience of nearly three years with the treatment and instrument which I advocate, I think it but just that I should place the results of my experience before my colleagues, and I urge them at least to give a few spare moments to the perusal of this article. This instrument is manufactured for me by the A. S. Aloe Company, of St. Louis. After having tried without success every method advised for the cure of gonorrhœa, I began to look for a scientific method of treatment, and after having summed up the existing conditions, which I shall briefly describe, I invented the syringe I am about to, now for the first time, give to the profession.

Let us see what are the existing pathological conditions: We have a long and narrow canal lined with a mucous membrane (which is thrown into innumerable folds), which has become infected with a specific micro-organism (the gonococcus). What occurs? In the first place, the gonococcus, being placed upon a culture medium favorable to its growth, rapidly proliferates, setting up an acute inflammation, which is followed by all the phenomena we are all so familiar with and which we have seen so often. What, then, are the requirements? In the first place, a remedy which will destroy the micro-organisms, prevent their growth, and render the mucous membrane a poor culture medium; in the second place, a method whereby the above-named remedy may be placed in contact with the gonococcus in such a manner that it will immunize the whole length of the urethra.



In answer to the first condition (no antiseptic having been discovered that will destroy the gonococcus without doing injury to the mucous membrane), we are compelled to use an antiseptic in a mild solution that will immunize the mucous lining and render the germ inactive. Such an antiseptic we have in the permanganate of potassium, which has been highly recommended by a number of specialists, and which has given me most success in solutions of 1 to 1,000 to 1 to 5,000. In this remedy we have an antiseptic meeting nearly all the requirements; while in the strength of solution used it is not, strictly speaking, a germicide, yet it prevents the gonococci from proliferating rapidly and renders the mucous lining a poor culture medium. For the second requirement I wish to call your attention to the syringe shown in the cut. The catheter part is made of sterling silver and is just long enough ordinarily to reach the sphincter at the neck of the bladder, the main feature being the small holes drilled throughout its length. Let us see what takes place when this syringe is used. The catheter is passed, the end touches the sphincter, which spasmodically closes, closing the opening into the bladder. The syringe, holding about half an ounce, is now attached and the fluid forced into the catheter. What happens? The opening in the end is closed by the grip of the sphincter and the solution is forced out of all the small openings in the shaft of the catheter, thus touching every part of the urethra from the sphincter to the meatus, entering all the numerous folds of the mucous membrane, the surplus flowing back, thus placing the injection in contact with the micro-organisms in such a manner that it does not carry infection into the bladder. The lining membrane becomes saturated, rendering it a poor culture medium, and the gonococci are soon eliminated. I generally give one injection of an ounce of the permanganate solution a day, using two when necessary, always being careful to sterilize the whole syringe before using. I never have had a case last over two weeks, and have effected cures in five days, having cured a case of seven years' standing in thirteen days.

There are no complications following this treatment. Never have I seen a stricture or any of the usual complications follow in my three years' experience with this method. Having treated nearly fifteen hundred cases in the past three years, I have only had three failures, and I really believe that I have found the best method for the rapid and safe cure of gonorrhœa.

Miscellany.

The Twelfth International Medical Congress will be held in Moscow from August 19 to August 26, 1897. The preliminary programme of the Section in Hygiene, etc., contains the following titles: The Scientific Principles of the Sanitary Valuation of Drinking Waters—the Value of Physico-chemical and Bacteriological Analyses—The Influence of Local Conditions, by Professor F. Hueppe, of Prague; The Bacteriological Examination of Drinking Water, by Dr. Victor C. Vaughan, of Ann Arbor, Michigan; On the Principles of the Chemical Examination of Drinking Waters from the Sanitary Point of View, by Professor W. Gintl, of Prague; On the Present State of Hygienists' Opinion on Water, by Dr. A. Jolles, of Vienna; How Should the Physical Education of School Children be Conducted? by Professor A. Palmberg, of Helsingfors; On Alcoholism, by Professor J. Félix, of Bucharest; Hygiene with Reference to Alcoholism, by Dr. A. Korowine, of Moscow; The Value of Rescue Societies, in Mundy's Sense, for First Aid, by Dr. L. Frey, of Vienna; The Dwellings of the Poor in Large Cities, and Workmen's Homes in Manufacturing Centres, by Dr. J. Fekete de Nagyivány, of Budapest; Workmen's Homes, by Dr. L. Berthensen, of St. Petersburg; The Restriction of Tuberculosis, by Dr. Victor C. Vaughan; A *Résumé* of the Investigations Concerning the Prophylaxis of Tuberculosis in Cattle, and of Glanders and Tetanus in the Horse, by Professor E. Nocard, of Paris; Regulation of Milk Traffic from the Sanitary Point of View, by Professor R. Ostertag, of Berlin; On the Measures of Public Hygiene against Infectious Diseases, and the Value of Personal Preservation by Means of Inoculation, by Professor Hueppe, of Prague, and Professor F. Bosc, of Montpellier; International Measures to be taken against the Spread of Infectious Diseases by Travelers, by Dr. L. Csatáry de Csatár, of Budapest; How Should we Practise Isolation in Contagious Diseases? by Professor J. Monjarás, of San Luis Potosi, Mexico; On the Suppression of Leprosy, by Professor K. Dehio, of Juriew; On the Distribution of the Typhoid Bacillus in Nature, by Professor E. MacWheeny, of Dublin; A Contribution to the Bacteriological Diagnosis of Diphtheria, by Dr. F. Král, of Prague; The Organization of Sanitary Statistics, by Professor J. Félix, of Bucharest; The Statistics of Hospitals and Lunatic Asylums, and the Statistics of Students, by Professor A. Guttstadt, of Berlin; The Mortality among Workmen, a Study accompanied by a New List of the Mortality according to the Statistics of the City of San Luis Potosi during a Period of Five Years, by Professor J. Monjarás, of San Luis Potosi; On the Importance of Medical Instruction to Women, by Professor L. Bossi, of Genes; Building Plans, Construction, and their Sanitary Supervision, etc., with Reference to Climate and the Customs and Needs of Various Populations, by Baurath F. Ritter von Stach, of Vienna; On the Production of Naphtha, from a Sanitary Point of View, by Dr. L. Berthensen, of St. Petersburg; The Most Important Diseases of Railway Employees, according to the Variety of their Work and the Time of Year, by Dr. F. Spaet, of Ansbach, Bavaria; The Means of Disseminating a Knowledge of Hygiene, by Dr. L. Burgerstein, of Vienna; On Popular Instruction in Hygiene, especially in Schools, by Dr. P. Kaufmann, of Cairo; New Investigations concerning Malarial Infection in Birds, by Professor E. Di Mattei, of Catania; A Simple and Universal Method of Staining Flagella, by Dr. F. Král, of Prague; Infant Mortality and Premature Death, by Dr. H. Allbutt, of Leeds, England; The Removal of Snow from Cities, by Professor T. Weyl, of Berlin; A Contribution to the Study of the Action of the Sun, with Observations taken Six Thousand Feet above the Level of the Sea near the Tropical Line, by Professor J. Monjáras, of San Luis Potosi; An Adequate Control over Articles of Food in Large Communities, and The Composition, Recognition, and Value of Real Hungarian Wines, by Dr. S. Bein, of Berlin; The Chemical Examination and Critical Estimation of Medicinal Wines, and Pigments containing Lead, by Dr. R. Kayser, of Nuremberg; On the Margarin Products from the Hygienic Point of View, by Dr. A. Jolles, of Vienna; On Influenza, by Dr. Issa Hamdy Pasha, of Cairo; Prostitution and its Relation to Hygiene, by Dr. L. Frey, of Vienna; The Electrophthalm—an Apparatus for the Perception of Light, Transforming the Phenomenon of Vision into a Phenomenon of Touch, by Dr. C. Noïchewsky, of Dwinsk; Conditions to which the Better System of Heating and Ventilation of Public Buildings should Correspond, by Professor E. Trélat, of Paris; The Influence of Climatological Conditions on Heating and Ventilation, by Dr. Onimus, of Monte Carlo; The Hygienic Significance of the Addition of Iron to Water and its Subsequent Removal by Filtration, by Mr. F. Fischer, of Worms; The Incineration of Fæces, by Professor T. Weyl, of Berlin; The Utilization of the Waste and Excrementitious Matters of Cities, by Professor J. Crocq, of Brussels; and The Regulation and Hygienic Value of Meat-refrigerating Establishments in Cities, by Professor H. Lorenz, of Halle.

The programme of the Section in Legal Medicine is as follows: The Formation of an Institute for the Special Teaching of Forensic Medicine, and the Modification Consequent upon the Conditions regarding the Teaching of Forensic Medicine, by Professor Patennko, of Kharkhow; The Necessity of Exacting a Special Diploma from Physicians, by Professor Lacassagne, of Lyons; On a Wider Application of the Method of Microscopical Investigations in Forensic Medicine, by Professor Iwanowsky, of St. Petersburg; On the Application of Bacteriology in Forensic Medicine, by Professor Lacassagne; Medico-legal Evidence of the Presence of Gonococci, by Professor Kratter, of Gratz; The Present State of the Question of Ptomaines in Forensic Medicine, and The Present State of the Question of Vital Evidence and of the Factors which Influence its Accuracy, by Dr. Belline, of Kharkhow; The Importance of the So-called Indications of Death by Asphyxia, by Professor Strassman, of Berlin; On the Conditions Favorable to the Production of Subpleural Ecchymoses, by Professor Lacassagne; Ecchymoses and their Relation to Asphyxia, by Dr. Belline; The Glycogenic Function of the Liver in its Relation to Medico-legal Valuation, by Professor Lacassagne; On Poisoning with Acetic Acid, by Dr. Tufanow, of Kiew; The Anatomo-pathological Indications of Death from Cold, by Professor Lacassagne; Medico-legal Examination in Cases of Death from Chloroform, by Dr. Schulz, of Berlin; On the Cauterizing Action of Arsenous Acid and of its Salts, by Dr. Mittenzweig, of Berlin; On the Responsibility of Hysterical Persons, by Professor Leubucher, of Iene; The Penal Law as Applied to Crimes of a Sexual Character, by Professor Kratter, of Gratz; Does Criminality Exist according to the Acceptation of Lombroso and his School? by Professor Kratter; On Death from Shock, by Dr. Puppe, of Berlin; On Cadaveric Rigidity, by Professor Seydel, of Königsberg; The Peculiarities of Decomposition of the Cadaver of the Fœtus and of the New-born, by Professor Brouardel, of Paris; The Manner of Distinguishing the Blood of Man from that of Animals in Medico-legal Investigations, by Dr. Dwornitchenko, of Kharkhow; and Criminal Mutilation and Procedures of Reconstruction, by Professor Lacassagne.

The programme of the Section in Laryngology and Rhinology is as follows: Suppurations of the Nasal Sinuses (except the Maxillary), their Diagnosis and Treatment, by Dr. E. Moure, of Bordeaux, and Dr. M. Hajek, of Vienna; Cancer of the Larynx, the Diagnosis and Treatment, by Professor O. Chiari, of Vienna, and Dr. G. Catti, of Fiuma; The Causes and Treatment of the Loss of Voice in Singers, by Professor H. Krause, of Berlin, and Dr. M. Lermoyez, of Paris; The Advances made in the Local Treatment of Tuberculosis of the Larynx since the Last International Congress, by Dr. Ruault, of Paris, and Dr. J. W. Gleitsmann, of New York; Laryngostroboscopy, by Professor Simanowsky, of St. Petersburg; The X Rays Applied in Rhino-laryngology, by Dr. I. MacIntyre, of Glasgow, and Dr. J. Mount Bleyer, of New York; Œsophagoscopy, by Professor V. Hacker, of Innspruck; and The Photography of the Larynx, by Dr. T. R. French, of Brooklyn.

Chronic Intussusception of the Vermiform Appendix into the Cæcum.—In the *British Medical Journal* for June 12th, Mr. G. A. Wright and Dr. Knowles Renshaw report the following case: The patient was seen on December 7th by Dr. Renshaw, who ascertained that the child had had frequent alternations between constipation and diarrhœa for twelve months, and that he had been suffering for some weeks from slight protrusion of the anus. On December 5th the child had an attack of diarrhœa; on the 7th he suddenly complained of pain in the abdomen, and was nauseated; a dose of castor oil was given without relief. Dr. Renshaw was then called in. He found the child suffering from well-marked attacks of colic, each attack lasting for a few seconds. The right leg was drawn up, and there was increased resistance at the right side of the umbilicus, but no definite tumor could be felt. There was no special tenderness near McBurney's point, but palpation soon brought on an attack of colic. The temperature was normal; the tongue slightly furred. The bowels had not been open since the 5th. Milk diet, hot fomentations, and a mixture containing bromide and an alkali were ordered. The same evening the bowels were moved, the stool being natural.

The attacks of colic continued with some nausea on the 8th, and were worse during the night and early in the morning of the 9th, when the vomiting became frequent. On the 9th the colic continued, and a distinct tumor of about the size and shape of a large walnut could be felt above and to the right of the umbilicus, just below the liver. Vomiting was frequent. A large simple enema was ordered, which brought away a quantity of mucus and a well-formed motion. On the 10th the vomiting ceased and the colic diminished, though there were several sharp attacks during the night. The tumor could be distinctly felt just above the umbilicus. On the 11th the attacks continued. An enema brought away a good motion, and the colic was relieved by opium. The child continued in much the same state till the 17th. An enema was given each day, and a formed motion came away. The tumor was felt between the umbilicus and the spleen on the 12th, and later moved downward and toward the right. On the 16th it was just to the left of the umbilicus. Gurgling was several times heard at the seat of the tumor during an attack of colic. No more mucus and no blood were at any time seen in the stools; the temperature was normal throughout. On the 17th the child was admitted to the Children's Hospital under Mr. Wright's care, as Dr. Renshaw considered the case to be one of intussusception, which would probably require operation.

On the child's admission to the hospital the resident medical officer, Mr. Izard, found the abdomen "apparently in normal condition"; no tension; there was "a vague sense of something in the nature of a swelling in the left hypochondriac region." Nothing abnormal was felt *per rectum;* some lumps of well-formed fæcal material came away during the examination, but there was no mucus or blood. There was no "abdominal expression," and the pulse was good. On the following day (December 18th) the bowels were opened by a simple enema; the child took food well, and for the next two days the pain seemed to have quite disappeared, but it returned on the 23d. On the 26th the child was examined under chloroform anæsthesia by Mr. Izard; nothing abnormal was felt *per rectum,* but there was a definite tumor in the course of the transverse colon, most distinctly felt in the left hypochondrium. Manipulation of the swelling without the use of an anæsthetic caused considerable pain. The condition did not materially change up to January 1, 1897; the bowels acted and there was nausea once or twice. There was visible peristalsis during the attacks of colic, which occurred at intervals and were brought on by palpation of the abdomen.

The child's general condition slowly got worse, and on January 7th the abdomen was opened by a median incision above the umbilicus. The mesenteric glands were found to be enlarged and hard, apparently tuberculous, but there were no tubercles seen on the intestines. A hard, very freely movable mass was also felt, evidently identical with the tumor. This mass slipped about freely in the abdomen from the right iliac fossa into the right loin and over to the left side of the abdomen, but it was only with considerable difficulty that it could be brought out of the wound. It was then found that the tumor consisted of the cæcum much thickened by inflammatory infiltration of its walls, together with the adjacent small intestine firmly matted to it. The appendix, thickened and bent upon itself, with a coating of lymph upon its surface, was found firmly tied down by its apex between the cæcum and ileum.

It was difficult, the authors say, in consequence of the matting of the parts together, to make out the exact condition of affairs; but after carefully dissecting out the tip of the appendix they could trace it to its base, and here an invagination of the root of the appendix into the cæcum was found. The condition was as if the base of the appendix had been pushed into the cæcum, carrying part of the cæcal wall with it, and forming a depression of about the size of the first joint of an adult index finger, from which the appendix sprang like the stalk of a mushroom. An enlarged gland lay close to the tip of the appendix. Attempts were made by squeezing and traction to withdraw the intussusception; but the rigidity and infiltration of the parts were so great that but little progress was made, and the peritoneal and muscular coats of the cæcum began to split at one or two points. An incision was then made into the cæcum in the course of a longitudinal muscular band and the finger passed into the bowel. By this pressure from within, aided by traction from without, part of the invagination was reduced, but the depression could not be completely obliterated. As it had been ascertained that the lumen of the bowel in either direction was not materially encroached upon, the wound in the cæcum was closed by Lembert sutures; the appendix was ligated and removed, its lumen being found completely obliterated at the root; and the abdomen was then closed. The after-progress of the case was satisfactory; the bowels acted on the 9th; the symptoms previously existing were relieved, and the child steadily improved in its general condition, and at the time of the report—May 4th—was attending occasionally as an out-patient, though apparently quite well.

Dr. Renshaw states that his reasons for concluding that the case was probably one of intussusception were as follows: 1. The symptoms pointed to trouble in the right iliac fossa when he first saw the patient, but from the absence of any rise of temperature or special tenderness near McBurney's point, he did not think that it was a case of inflammation of the vermiform appendix. 2. The persistent colic, the attacks of which became longer and worse as time progressed, seemed to him to be due to some lesion of the intestinal wall. 3. The tumor between December 9th and 12th moved from right to left in the path of the transverse colon, exactly as an intussusception does. This subsequently proved to be due to the extreme length of the mesocolon, which allowed the cæcum a great range of motion. 4. It was evident from the slightness of the general symptoms that, whatever the cause, it was not sufficient to completely obstruct the intestine. 5. After the first enema a quantity of mucus escaped.

Against these facts he places the following: 1. The rarity of chronic intussusception in children. 2. The tumor being not sausage-shaped, but oval. 3. There being no blood passed by the anus, and, except on one occasion, little mucus.

Mr. Wright states that when he first examined the patient, and indeed up to the time of the operation, his opinion was that the case was not one of intussusception, but of tuberculosis of the mesenteric glands, with incomplete obstruction by pressure and flexion of the bowel by an enlarged gland. There were, he says, enlarged tuberculous glands present in this case, but Dr. Renshaw's diagnosis proved to be the correct one.

He considers it too soon yet to say whether the child will succumb to tuberculosis, or whether any future trouble will arise in the cæcum, but the removal of the appendix and the partial reduction of the invagination, as well as the great improvement in the child's condition, lead him to hope that its troubles from that cause are at an end.

Mr. Wright thinks that this particular form of intussusception must be exceedingly rare, for he states that he has not met with a similar case or found a record of one.

Some of the Untoward Effects produced by the Administration of the Bromine Compounds.—In an article on this subject in the *Therapeutic Gazette*, Dr. Hobart Amory Hare alludes to those conditions produced by the bromine compounds which are unusual and not very well known, although, he says, they are commoner than might be supposed. He refers to a paper read at a meeting of the Association of American Physicians in May, 1896, by Dr. S. Weir Mitchell, who related a number of instances in which the use of the bromides had speedily produced many untoward effects in addition to the skin eruptions, disordered digestion, and mental slowness usually met with after full doses of these drugs are used. The symptoms, he said, were great irritability of temper, moroseness, and homicidal or suicidal tendencies. In a case of Jacksonian epilepsy in a child, imbecility developed from the use of bromides; another child became a sufferer from amnesic aphasia; and in a woman suicidal tendencies and melancholia appeared when the drug was used and disappeared when it was stopped. Voisin and Stark, says Dr. Hare, reported cases many years ago, and Dr. Harriet Alexander, as recently as in July, 1896, has contributed a valuable paper on this topic in which she reviews the American literature of the subject quite thoroughly. Seguin has reported the case of a twelve-year-old boy who had *petit mal* in the form of chills, and when these were stopped by the bromides he became unmanageable and boisterous. Hughes, of St. Louis, has reported another case of *petit mal* in which kleptomania developed when the bromides were given, and Rockwell has recorded an instance in which an epileptic woman, on taking the bromides, became irritable and suspicious. Dr. Alexander, in the paper cited, mentions several instances from an earlier contribution of hers on this subject. An epileptic nymphomaniac always became irritable and suspicious on the use of the bromides. In another woman, with a family history of epilepsy and imperative homicidal conceptions of long-continued form, erotico-religious, auditory, and visual hallucinations followed the use of the bromides. In another woman troubled with coprolalia the bromides caused sullenness and unrestrained coprolalia. In still another case the bromides caused an irritable, suspicious state in which the patient became treacherous. A ten-year-old girl with procursive epilepsy had three attacks replaced by irregular kleptomania attacks, and she became suspicious and irritable. Dr. Hare states that similar instances have been reported by Dr. Janeway, Dr. Dana, and Dr. Draper, and that the older literature of medicine shows that these unusual effects were not unknown, and are not now met with for the first time. Dr. Hare cites many cases in which the marked ill effects of the bromides are reported by authors, and he thinks that one conclusion is certain beyond doubt, that in many cases of epilepsy the bromides are very capable of causing grave injury aside from the general depressing influence which they exert in all persons if given in full doses for any length of time.

Regarding the question, says Dr. Hare, from the standpoint of practical therapeutics, it need be stated only that potassium bromide in full doses produces depression, and he quotes from the New Sydenham Society's translation of the *Lectures on Pharmacology* by Professor Binz, of Bonn, as follows: "Control experiments with potassium chloride showed that the effect on the heart was always largely due to the potassium. Later on we shall have yet to consider in detail the very marked effects which the salts of potassium exert upon the heart's action."

And again Binz states: "Sodium bromide, taken by the same individuals in the same manner as the potassium salt, produced the same effects on the nervous system, but not on the pulse and temperature."

To quote once more from Binz: "If potassium bromide has been taken for a considerable time, or even for a few days only, by susceptible persons, it has been observed to affect the *heart* unpleasantly, the pulse becoming feeble, irregular, and intermittent. This is doubtless due to the potassium, which, constituting thirty-three per cent. of the salt, may very readily, given in the large doses above mentioned, and in a form so easily absorbable, exert its depressing influence upon the heart's action. *For this reason sodium bromide is preferred by many physicians.*"

Dr. Hare states that even in the most modern works on therapeutics the danger of depression is not mentioned; yet it is well known, according to T. Lauder Brunton, that all potassium salts cause depression, shown by diminished energy of contraction of the cardiac muscle, with final stoppage in diastole. As potassium bromide is constantly administered in large and repeated doses, says Dr. Hare, the action of its basic constituent should always be borne in mind, and if signs of its depressing effect are observed its use should be abandoned, the bromide of some other base being selected if in other respects the action is beneficial.

The author concludes therefore that the bromides are not such harmless drugs as some have thought, and that in some cases they are capable of producing maniacal delirium whether the patient is sane or insane. Finally, if they are used, the sodium preparations are to be preferred to those of potassium.

Acetanilide Poisoning in a Newborn Infant.—In view of the frequent use of acetanilide as an antiseptic dusting powder, and the practically unlimited amounts which are habitually sprinkled upon fresh wounds, Dr. Irving M. Snow records the following case in the June number of the *Archives of Pœdiatrics*, with the idea of suggesting that the employment of this drug upon raw or granulating surfaces of young infants is accompanied by considerable danger of toxic symptoms from absorption. The patient was the second child of a physician, was born after a normal labor, and showed every evidence of a perfect development and vigorous physique. The umbilical cord was detached on the seventh day, and as there was some discharge upon the stump, the father dusted the navel with crystals of acetanilide, using about sixty grains of the drug once. Up to the end of the ninth day the child thrived in the most satisfactory way, but during the following night it seemed languid and would not nurse. About 7 A. M. April 30th, the father examined the baby and noticed that it was very cyanotic, presenting a vivid contrast to its usual color. which was exceedingly fair.

In addition to this lividity, the baby had a very pinched expression and was weak, apathetic, and breathing rapidly. The cyanosis steadily increased, and the author saw the child at noon. It was plump and well formed. Its face, lips, fingers, and toes, in fact, the whole of the skin and visible mucosa, were of a dark blue color like that of a subject in an extreme stage of asphyxia. The lividity was intensified by the child's occasional crying. The rectal temperature was 99° F.; respiration, 60; pulse, quick and weak.

Having no thought of any drug intoxication, says Dr. Snow, it was considered that the cyanosis might be due either to congenital heart disease, to atelectasis pulmonum, or to sepsis. The heart was carefully auscultated. Its action was rapid and feeble, but the valvular sounds were clear, with no suspicion of a murmur at the apex or at the aortic or pulmonary orifices. Air entered all parts of the lungs. There were no râles or areas of silence.

The navel was next examined. The cord had fallen off three days before, and the umbilical hollow was filled with acetanilide. This powder was wiped off, and beneath was a dry, granulating surface, showing no evidence of inflammation or suppuration.

The pupils were normal, there was no sweating, and the child was conscious. The vigilant grandmother had kept the extremities warm by wrapping them in hot flannels. The patient seemed to be in an exceedingly perilous condition. Poisoning from acetanilide was diagnosticated, and oxygen, whisky, and digitalis were administered. No improvement occurred for about ten hours, the child being limp, apathetic, and too exhausted to nurse. Late in the evening it swallowed a little breast milk, and after twenty-four hours slowly rallied. The cyanosis lasted seventy-two hours, or increased for about ten hours, was stationary for fourteen hours, and then slowly subsided and was succeeded by a slight transitory jaundice. No effect upon the cyanosis was noticed from the oxygen inhalations. The acute impairment of function passed away only after the drug was eliminated. During the illness urination and defæcation were normally performed.

The severity of the toxæmia, says the author, may be inferred from the rapid emaciation; there was a loss of a pound, fourteen per cent. of the weight, in three days. Not until the fourth day did the child regain its former strength and disposition. Dr. Snow thinks that the long interval, sixty hours, which elapsed between the application and the appearance of the symptoms, is of interest, and says that it was perhaps owing to the relative insolubility of acetanilide in most fluids. The issue of acetanilide poisoning, he says, is uncertain. Although a few deaths have been recorded, yet recovery has occurred in the majority of cases, showing, he thinks, that the symptoms are more threatening than dangerous.

Dr. Snow cites a number of cases in which this drug has been employed with unfavorable and, in some cases, disastrous results, and he concludes that acetanilide, undiluted, should be discarded in the surgery of young children, and that it is especially dangerous when used as a dressing for the umbilicus on the newborn. If caution is not exercised, the surgeon, he says, may have the results of his skill offset by poisoning from his antiseptic.

The Late Dr. William T. Lusk.—The faculty of the Bellevue Hospital Medical College have the painful duty of directing a formal record in their minutes of the untimely and sudden death of their beloved colleague and president, the late Professor William Thomson Lusk, on June 12, 1897. Dr. Lusk was an alumnus of the college, of the class of 1864, and class valedictorian. He became one of the instructors in the summer session in 1870. He was appointed professor of obstetrics in 1871 and president of the faculty in 1889. His great ability as a teacher and voluminous writer commanded the respect and admiration of the profession at home and abroad. His public services in the institutions under the charge of the commissioners of public charities were rewarded by the appreciation and gratitude of all interested in medical charities. His devoted work in behalf of medical education connected his name most prominently with the teaching of medicine, and especially with the Bellevue Hospital Medical College. But above all, his fearless honesty of purpose and his exquisite gentleness of character and manner so endeared him to his associates in the college that we, his loving colleagues and friends, feel in his death a personal bereavement which words fail adequately to express. In common with his family, the profession, and his many devoted friends, we mourn his loss and deplore the premature end of a most useful and valuable life.

[Signed.] Austin Flint, *Secretary.*

The Journey to Moscow.—The committee of organization of the Twelfth International Medical Congress announces that it has received about seven thousand free railway tickets of the first class for the use of delegates in journeying to and from Moscow. They are subject to the following conditions: 1. The committee, on sending a ticket to the member for whom it is intended, must write on it his family name, the name of the station from which he is to start, and, in the case of a foreign visitor, the name of the first Russian frontier station, as well as the route he is to follow to and from Moscow. 2. Apart from this, the committee must furnish the member with a certificate that he has paid his registration fee and is really a member of the congress. On the demand of the officer in charge of a train, these certificates must be presented to him by their bearers. 3. No return ticket will be available until the committee of organization has stamped it in a manner indicating that the bearer took part in the international congress. 4. In the discretion of the committee of organization, the names of members of the congress may be inscribed not only in Russian, but also in a foreign language. 5. Tickets for the journey to Moscow should be presented at the office of the station of departure, or at the first Russian frontier station, so that the train stamp may be added to it; on the return trip, these tickets are to be presented at the Moscow station, where they will be stamped with the date of departure (old style). 6. These tickets will be available until the 1st (13th) of September of the present year. 7. Each ticket-holder will be entitled to the free transportation of sixteen kilogrammes (about thirty-five pounds) of baggage. 8. As soon as the committee of organization has given notice of the time of the members' passing the frontier stations, and of their number, the railway director will make arrangements for their reaching Moscow as comfortably and promptly as possible, also for their departure from the city.

According to these conditions, in order to obtain a free ticket, a member must inform the secretary-general of the route he intends to follow going and coming. Ladies and others accompanying members are not entitled to free tickets.

The Prognosis and Duration of Attacks of Mental Disease.—In an article on this subject in the *Boston Medical and Surgical Journal* for June 10th Dr. Henry

R. Stedman remarks that heredity is considered a powerful influence; that it is the general belief that the inheritance of a tendency to insanity means impossibility of recovery from an attack. On the contrary, he says, decidedly hereditary cases are often the most curable, although there is more likelihood of a relapse than in those in which the hereditary tendency is absent, and therefore, as might be expected, hereditary insanity is shown chiefly in the recurrent, periodical, and alternating forms.

The time of life also modifies the prognosis, says Dr. Stedman. It has been estimated that sixty-three per cent. of recoveries from insanity take place before the age of twenty-five, although the young are more subject to relapses. The menopause is another period of life at which recovery occurs in many cases; but the disease is usually of long duration, not ending until the cessation of the menstrual function is complete. Genuine climacteric insanity, however, says the author, is rare. Old age, on the contrary, is obviously the most unfavorable time for an attack of insanity, and here death from exhaustion is to be feared rather than death of the mind alone. There is, however, he continues, some risk in predicting that recovery is impossible at this time of life, for marvelous cases of complete cure of acute melancholia, in which exhaustion seemed inevitable from the extreme agitation, depression, refusal of food, and consequent emaciation, are occasionally met with.

The fact that the immediate cause of an attack is well limited and appreciable indicates a good chance of recovery; for example, sudden bereavement, shock, accident, money loss, the puerperal state, lactation, etc. Treatment affects the prognosis, especially the time of its adoption, the patient's chances growing fewer the longer it is delayed. The kind of treatment has also a decided influence, and the greater prevalence of care and treatment directed to the individual needs of the patient is sure to be a most potent factor in increasing the number of cures, preventing relapses, and relieving chronic cases. The form of insanity also has a bearing on the prognosis. Acute forms in which recovery is especially apt to occur are stuporous insanity, or so-called primary dementia; confusional insanity; puerperal and lactation insanity; and that which follows acute physical disorders. But systematized delusional insanity which is of gradual development and is not ushered in by an emotional stage belongs to the chronic class and is rarely curable. The secondary, or terminal, stage, dementia, as well as recurrent and alternating insanity, is hopelessly incurable. Periodical insanity should be distinguished from simple recurrent insanity, and its prognosis is different. In character, course, and severity, each attack of periodical insanity is identical with the others, while the long and fairly regular intervals of sanity which separate them show but little departure from the normal state for the greater part of the patient's life. Ordinary recurrent insanity, however, varies greatly in all these particulars; one attack may be mania, the next one or two may be melancholia. The length of the attack is also very variable, but grows, on the whole, shorter between the successive relapses; and the mind becomes weaker in the intervals, until terminal dementia closes the scene.

General paralysis of the insane, also known as paretic dementia, general paresis, and popularly as paresis, is, it is hardly necessary to say, continues Dr. Stedman, a deadly malady, almost inevitably fatal. There are, to be sure, a few, very few, examples of recovery reported by competent observers; but they are not by any means incontestable, while the usual alleged cures are either in cases of faulty diagnosis or rest on premature conclusions during some remission in its course. It is a frequent experience of the alienist to find favorable prognoses made in cases of general paresis by general physicians who have mistaken for ordinary insanity attacks of mania or melancholia that are really of paretic origin, and, far from being idiopathic functional psychoses, are simply symptomatic groups, or syndromes, occurring in the course of this grave structural disorder of the brain (general paresis). As mania, and especially melancholia, whether occurring from ordinary causes or from general paresis, are in many cases the same to all appearances, it is not surprising, he says, that such errors occur where the opportunity for observation is necessarily so limited as is the case in general practice. The incipient stage also of general paresis is sometimes thought to be neurasthenia or hypochondriasis, so closely does it simulate these disorders in many cases.

The duration of general paresis, says the author, is often perplexing to predict, and although it may safely be said that in the majority of cases the end may come at any time within three or four years from the onset of the active symptoms at the furthest, according to the kind of care the patient receives, the nature of the attack, and the severity of the intercurrent affections to which it predisposes the patients, there is considerable variation in the length of its different stages.

There are many minor conditions of an attack of insanity, Dr. Stedman says, that are useful to know, when properly estimated, as simply corroborative indications. Of this order is the important prognostic point that is furnished by the way an attack begins, for generally a quick onset means a fairly quick recovery, except, of course, in those cases of grave delirium known as typhomania and as acute delirious mania or melancholia, a form which is extremely dangerous to life, especially in old people. On the other hand, says the author, a long antecedent period of mild mental symptoms or peculiar conduct indicates chronicity. Another indication that is quite reliable is that when improved nutrition keeps pace with the mental gain the chances of recovery are good, while an improved physical condition unattended by mental improvement, or *vice versa*, is a bad omen. He thinks that, on the whole, the best recoveries are seldom perfect, and that in a large proportion of cases the patients fail to recover their former mental condition in full.

Regarding the duration limit, Dr. Stedman states that by general consent twelve months has come to be considered as that limit, although all asylum physicians do not hold the same opinion, some placing the limit as low as six months for curable cases. There is consequently a wide variation occasionally met with when an estimate is to be made of the number of acute and chronic cases in a given collection of insane persons.

Even the duration limit of a year, he thinks, is too low, and works harm. It is scientifically inaccurate on its face, from the fact that the duration of a person's insanity is almost invariably understated by relatives. But even accepting twelve months as the correct average duration, quite a large number recover in a greater length of time. From the table in twenty-five annual reports, since 1891, of five Massachusetts lunatic hospitals, which gives the whole duration of mental disease (exclusive of previous attacks) in the cases of recovery, it appears that, of fourteen hundred and sixty-nine recoveries of known duration, *twenty-one per cent.* occurred after a duration of more than a year and (for the most part) under three years.

This artificial standard of duration, therefore, he says, can not fail to frequently consign curable cases to the limbo of the chronic class, and thus deprive the patients of the special care and attention which they demand and which may be essential for recovery. Patients who are thus prematurely labeled "chronic" are often removed from the State hospitals, with all the advantages there to be had in the way of nursing and skilled medical attendance and supervision, to the town almshouse, where they have little or no care, if they are not actually neglected or abused. In private cases also, by reason of the general acceptance of this standard as the limit of the acute condition, changes of treatment are often precipitated which are prejudicial to the best interests of patients. Dr. Stedman states that it often happens that a patient who is being treated privately away from home is prematurely pronounced chronically and hopelessly insane, when a little longer delay might have resulted in cure and spared him the stigma which unfortunately and absurdly attaches to those who have been committed to an institution. It is not improbable, he thinks, that too rigid adherence to the twelve-month duration limit is in a measure responsible for the lack of that great desideratum, separate hospital accommodation for the acute cases, by reason of the fact that it is thus made to appear that too small a proportion of patients would be available to make special and separate construction advisable.

Is it not, then, he asks, far more humane to take the small risk of treating a few chronic cases as if they were acute and curable by including in the "acute" category all whose insanity has had a duration of at least a year and a half, than to deprive a fairly large number of curable cases of the benefit of special care and treatment?

Dyspepsia and Gastro-intestinal Dilatation in Children.—These troubles, says M. Gillet, in the *Journal des praticiens* for May 22d, are among the most frequent that are due to faulty hygiene in young children. Defective alimentation causes: 1. A diminution of the chemical operations of digestion. 2. Abnormal fermentation consequent upon prolonged stasis of food and upon its manner of preparation. 3. A diminution of the motor functions of the entire digestive tract, gastric and intestinal stasis. 4. A remote effect upon the general condition, especially on the organic system, the nerves, the circulation, the skin, the bony system, etc. For each of these results there is a special mode of treatment, as follows:

1. The digestive power of the patients must be increased by the use of pepsin, pancreatin, and maltine. In children, especially infants, they are to be preferred to the elixirs, and may be given in the form of powder, either alone or mixed with sugar or sweetmeats. According to each case, pepsin is prescribed alone, combined with pancreatin, or mixed with pancreatin and maltine. Hydrochloric acid also contributes to the normal condition of a good digestion, and it may be prescribed in the following solution:

Hydrochloric acid..	from 5 to 7 grains;
Distilled water..............	3 ounces.

This acid has, moreover, manifest antiseptic properties. As a digestive stimulant to favor secretion of the hydrochlorides, an alkali may be given half an hour before meals.

2. To combat abnormal fermentation, two means may be used at the same time, diet and antiseptics. The nature of the diet depends upon the age of the child. Regarding the antiseptics, some are directed to the stomach, others to the intestine. For the former, a weak solution of hydrochloric acid may be employed, or else diluted chloroform water as follows:

Saturated chloroform water, Syrup of peppermint, . .	each, 4 ounces.

A teaspoonful of this mixture may be given after meals.

The fluorides have the property of combating fermentation which is caused by bacteria and of leaving intact that which is derived from the amorphous ferments. Calcium fluoride seems to be too insoluble to act on the stomach, although M. Gillet states that he has given it occasionally, mainly with a view to its action on the intestine. M. Albert Robin prescribes ammonium fluoride as follows:

Ammonium fluoride..	from 5 to 8 grains;
Distilled water..............	9 ounces.

Of this a dessertspoonful is to be taken two hours after meals. Alkalies also may be useful in saturating the acids of gastric fermentation, and sodium bicarbonate or prepared chalk, alone or mixed in the following manner, may be administered:

Magnesium hydrate..........	113 grains;
Bismuth subnitrate, Prepared chalk, } each....	38 "
Sodium bicarbonate..........	75 "

This quantity makes from twenty to thirty doses, and may be taken in capsules or in julep. The formula is subject to change, according to the indications, in the quantity and in the ingredients.

In order to insure intestinal antisepsis, the compounds of naphthol, benzonaphthol and bismuth naphthol in powder, are especially recommended in doses of from fifteen to thirty grains, according to the age of the child, or else in suspension in julep.

If there are indications for purging, calomel is to be preferred to all other purgatives; if there is habitual constipation, castor oil in doses of from a quarter to a half or three quarters of a teaspoonful may be given every two or three days.

3. To increase the contractility of the digestive tract, drugs and mechanical and physical means may be resorted to. Drugs which act on the smooth fibres, such as nux vomica and ipecac, are to be recommended, either alone or combined in the following manner:

Tincture of nux vomica......	75 grains;
Tincture of ipecac..........	3 grains.

According to the age of the child, from five to six drops are to be given before meals. This may be increased if necessary, or the use of the remedy interrupted from time to time, but the treatment should be prolonged.

Regarding mechanical means, they may consist of compression with the aid of a flannel bandage or of abdominal massage methodically practised night and morning. Copious enemata, very hot or very cold, of plain water or containing boric acid or naphthol, are useful in exciting the contractility of the intestine. The physical means consist in the use of the galvanic and faradaic currents alternately applied at short intervals.

4. The general condition of young dyspeptics with dilatation requires hygienic treatment rather than drugs. Pure air, well-directed gymnastics and exercise, cold baths, and sea bathing constitute the principal means.

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THE LYMPHATIC CONSTITUTION,

AND ITS RELATION TO SOME FORMS OF SUDDEN DEATH.

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UNDER the term *constitutio lymphatica* have rather recently been described a series of cases presenting a characteristic hyperplasia of the lymph nodes, spleen, thymus, and often of the lymphoid marrow, associated with hypoplasia of the heart and aorta, and frequently also with rhachitis. These pathological conditions have been found especially in cases of sudden death, from a variety of causes, and are believed by many to indicate in these subjects diminished vital resistance and special liability to sudden cardiac paralysis.

The importance of the *constitutio lymphatica* and its relation to some forms of sudden death, especially to fatalities under chloroform narcosis, have been recognized for several years by the Vienna school of pathologists, but have received very scant attention elsewhere.

Two cases of sudden or unexpected death which have recently come to the writer's hands have shown in a striking degree some of the characteristic anatomical features of the lymphatic constitution, and seem to furnish rather convincing evidence of the correctness of the views recently advanced in regard to this condition.

In addition to the report of these cases, the writer has endeavored to briefly review the evidence on which are based the present views on the subject, and further, to consider in some detail the separate features of the lymphatic constitution and their pathological aspect in this and other conditions.

CASE I.—E. F., a girl, aged five years. Parentage, Irish.

Family History.—No relatives were known to have suffered from tuberculosis, enlargement of lymph nodes, tumors, or from any tendency to hæmorrhages or anæmia. Several immediate relatives died of nephritis, rheumatism, and endocarditis. Father and mother have always been healthy. A brother, two years old, was carefully examined on account of a possible reproduction of some of the conditions seen in the sister. This child looked well. All superficial epiphyses seemed normal, and there were no signs of rhachitis other than a markedly protuberant abdomen. The cervical lymph nodes were distinctly palpable from the angle of the jaw to the clavicle. In one axilla a considerably enlarged node was detected. The inguinal nodes were of moderate size and not distinctly enlarged. The epitrochlear nodes could not be felt. The tonsils were moderately enlarged, but not hyperæmic, being identical in appearance with those found at autopsy in the sister. The child always breathed through the nose. The thyreoid was not enlarged; the thymus could not be detected; the area of splenic dullness was not enlarged, although distinct.

Examination of the blood showed the red cells to be normal. There was a moderate increase of leucocytes, of five hundred of which seventy-six per cent. were uninuclear, mostly small or medium-sized lymphocytes, twenty-two per cent. multinuclear, two per cent. eosinophile. No normoblasts were seen.

The examination of this child indicated therefore, indistinctly, a constitutional tendency similar to that demonstrated at autopsy in the sister. That the child is really a subject of the lymphatic constitution it is not intended to state, but that a series of such examinations would be a desirable addition to our knowledge it is hardly necessary to urge.

A baby brother of four months appeared perfectly healthy.

Previous Personal History.—The child had always been regarded as healthy. At two years and a half had had measles, the attack being of moderate severity. Three months before her death she had a mild attack of scarlatina, while the younger brother was passing through a very severe attack. The appetite was always good, and there were no previous gastro-intestinal, pulmonary, or renal symptoms, except a tendency to constipation.

On October 5th the patient fell by accident in the street and received an incised wound of the tongue, which had been caught between the teeth. The bleeding from the wound continued for an hour and alarmed the mother, who brought the child, pale and frightened, to the Roosevelt Hospital, out-patient department.

The further history of the case was furnished through the kindness of Dr. Zerega. Chloroform was administered in order to place a few sutures in the wound, which was still bleeding moderately. The anæsthesia proceeded uneventfully for fifteen to twenty minutes. The inhalations had been interrupted once to allow the stitching to proceed. The child had partly regained consciousness and the inhalations were again begun, when it was noticed that the face was very pale, and the pulse, previously good, was impalpable. Vigorous attempts at resuscitation, including tracheotomy and artificial respiration, were without effect. The pulse never returned, the breathing failed steadily, and although feeble gasps were elicited at intervals for half an hour, respiration finally ceased entirely, and the child was pronounced dead.

Autopsy (*twenty hours after death*).—Body well nourished, without rigor. Post-mortem lividity faint, the skin being generally pale. Heart: Size normal, walls flaccid, left ventricle contains an ounce of dark fluid blood. Right chambers moderately filled with dark fluid blood. Endocardium normal. A few subpericardial ecchymoses. Aorta of normal size. Lungs: Blood contents considerable. There are numerous subpleural ecchymoses. Bronchi: Beginning suddenly an inch below the cricoid cartilage—that is, at the level of the tracheotomy wound—the bronchi are deeply reddened. No foreign matter in trachea or bronchi. Mucous membrane of larynx and epiglottis slightly shrunken. Liver contains much fluid dark blood. Thymus measures 7 × 5 × 2 centimetres and covers the upper third of pericardium. Spleen slightly enlarged. Malpighian bodies extremely prominent, looking like large miliary tubercles. Pulp very hyperæmic. Stomach: The solitary follicles, especially about the pyloric end, are distinctly visible. Intestine: Throughout the entire intestinal tract, especially in the ileum, the solitary follicles are very prominent. Peyer's patches are enormously hypertrophic. The lower lenticular patches measure eleven to nine centimetres in to decide. For the present purpose it need only be claimed that the existence of this abnormity is in itself a probable ground for the belief that the subjects of the *constitutio lymphatica* possess inferior vital resistance.

Hyperplasia of the Lymphatic Organs.—The hyperplasia of the lymphatic structures of the body is a more recent contribution to the pathology of this form of diminished vital resistance, and the demonstration of its essential importance has served to correlate many facts previously known, and to justify the employment of the old term *constitutio lymphatica* revived by A. Paltauf for the general condition. That some underlying constitutional defect must be assumed to exist in order to account for many sudden deaths usually referred to the pressure of an enlarged thymus upon the trachea, bronchi, or great vessels, was the conclusion reached by Paltauf and others from a long experience with this class of cases at the *Institut für gerichtliche Medicin* in Vienna.

Since the time of Friedleben, who in 1858 denied that a normal or hypertrophic thymus gland could produce fatal laryngismus, there has been constant discussion of the manner of death in many cases of sudden death without apparent organic cause other than enlargement or persistence of the thymus, nor are opinions as yet in agreement on this subject. Many writers still claim that death in these cases is produced either by direct pressure of the enlarged thymus upon the bronchi or great vessels, or by reflex cardiac or respiratory paralysis arising from the thymus. Of such writers may be mentioned Recklinghausen, Nordmann, Gluck, Pott, Seydel, Grawitz, and Benecke, and their reported cases indicate that under some circumstances the pressure of an enlarged thymus may reach a dangerous degree. Only a small percentage of the deaths could, however, be explained on such a basis, as the patients usually died very suddenly and the hypertrophy of the thymus was often inconsiderable.

The observations of Paltauf convinced him that many of these fatalities, especially in infants, must be referred to a capillary bronchitis, of which the post-mortem evidences are often very meagre, and the observations of Paltauf, Hoffmann, and Kolisko have led them to believe that all the others are referable to a peculiar constitutional defect, of which an expression is to be found in general hyperplasia of the lymphatic structures. In the experience of these observers, the enlargement of the thymus in these cases is only one feature of a general lymphatic hyperplasia, involving also the spleen, the tonsillar ring, the thoracic and abdominal lymph nodes, and sometimes the bone marrow. Moreover, an examination of the cases of "*thymus Tod*" reported by earlier writers, even those of Friedleben, discloses the fact that in the majority of instances it was noted that the tonsils, spleen, and lymph nodes were more or less hypertrophic, although no particular significance was attached to this fact at the time.

The same observers noted a similar condition of general hyperplasia of the lymphatic structure of the body in a series of sudden deaths during chloroform narcosis, and the study of these cases, which have recently been collected by R. Kundrat, together with the reports of similar cases from other sources, renders it possible to give a somewhat detailed description of the pathological changes in the enlarged organs, and of the other characteristics found at autopsy in these cases.

Pathological Changes in the Lymphatic Structures.—The thymus frequently measures from six to ten centimetres in length, reaching at times from the middle lobe of the thyreoid to the heart's apex. Its consistence may be increased or it may be soft and exude on section a milky white fluid. It has been found adherent to the pericardium, and often encircles more or less completely the great vessels. The blood content of the organ is often found increased, and its surface or section may present the petechiæ characteristic of death by asphyxia. The histology of the enlarged gland indicates usually a simple hyperplasia of the lymphoid cells, enlarging and multiplying the follicles, sometimes causing the deposit of small nodules of lymphoid cells in the centres of lobules, in the trabeculæ, or even in the outlying adipose tissue.

The enlargement of the spleen is of moderate grade, and is referable to a simple hyperplasia of the lymphoid elements, with hyperæmia. The enlarged Malpighian bodies being usually devoid of blood and light colored, are prominently set off from the hyperæmic pulp, giving an appearance not unlike that of miliary tubercles. In some cases the lymphoid cells are so much increased as to infiltrate the splenic pulp, and the microscopical outlines of the follicle are then indistinct.

The pulp cells may contain an increased deposit of blood pigment, of which condition one of the present cases furnishes an extreme example.

The lymph nodes most frequently affected are the pharyngeal, thoracic, and abdominal chains. The faucial and lingual tonsils are nearly always enlarged, the new cells not always being confined to normal limits, but sometimes forming a diffuse infiltration of the mucous membrane about the original follicles. From the lingual tonsil the infiltration may involve the epiglottis and sinus pyriformis.

The cervical, mediastinal, and axillary nodes may be moderately enlarged, especially along the course of the great vessels. Tubercular lymphadenitis has been observed (Bayer).

The abdominal lymph nodes, especially those of the intestine and mesentery, are usually strikingly enlarged. In one of the present cases some of the Peyer's patches measure nine to eleven centimetres in length, and their follicles and the solitary follicles project very prominently above the surface of the mucosa. The swollen mesenteric nodes may remain entirely discrete, or, as in the present case, they may form a solid mass of lymphatic tissue, in which the separate nodes are closely applied one against the other, although the capsules remain intact.

The enlargement is due to a simple hyperplasia; the lymph paths appear for the most part undisturbed, but the adjoining connective and adipose tissue may contain a moderate deposit of new lymphoid cells. The retroperitoneal nodes are often affected. The mesenteric nodes may be enlarged when the intestinal follicles appear normal. The nodes of the entire gastro-intestinal tract are frequently involved in the hyperplasia. The inguinal, popliteal, axillary, cervical, supraclavicular, and infraclavicular nodes may be moderately enlarged. Small collections of lymphoid cells have been found in the thyreoid gland, which is frequently enlarged in these cases. Similar collections of lymphoid cells were noted in the capillaries of the liver in one of Kundrat's cases, aged fifteen years. In three of Kundrat's cases, aged fifteen, twenty-four, and thirty-one years, red marrow was found in the shaft of the femur. In only one of these cases, however, does it seem certain that this unusual condition represented a true lymphoid hyperplasia, as in Case II, in which there was noticeable atrophy of fat cells and more or less diffuse lymphoid tissue in the marrow, containing neutrophile and eosinophile myelocytes and dense nodules of lymphoid cells. The marked variability of the character of the bone marrow in the femur has been amply demonstrated by the extensive studies of Grohé, and of Litten and Orth.

Relation to Pseudo-leucæmia.—Such a general and extensive hyperplasia of the lymphatic structures of the body at once suggests a possible connection with leucæmia or pseudo-leucæmia. The resemblance to these diseases is especially evident in those cases showing extensive enlargement of the mesenteric nodes or diffuse infiltration of mucous membranes with lymphoid cells, or collections of lymphoid cells in unusual situations, as in the hepatic capillaries and thyreoid gland. The destruction of red blood-cells characterizing these diseases has been approached in cases of the lymphatic constitution, as indicated by the deposit of blood pigment in the spleen and lymph nodes, a condition well marked in the spleen in one of the writer's cases. Koeppe reports a similar case in which the deposits of pigment were very extensive, and also notes an increased number of leucocytes in sections of many vessels, without stating the character of the leucocytes, an observation to which it seems hardly possible to attach any significance. In one of the writer's cases eighty-four per cent. of a considerably increased number of leucocytes in a pial vein were small and mononuclear. Ortner observed in one case a lymphocytosis at a time when it was not known that a lymphocytosis is usually found in the blood during the second week of typhoid fever. In three of Kundrat's cases the extent of lymphatic hyperplasia might have sufficed for an early stage of leucæmia.

But even these many isolated points of resemblance constitute no distinct indication that the *constitutio lymphatica* has any immediate connection with pseudo-leucæmia or leucæmia.

Comparing the enlarged intestinal follicles in the writer's first case with the intestinal lesions of some undoubted cases of pseudo-leucæmia, characteristic differences were noted. The small nodules of new lymphoid tissue in the latter disease grow laterally for some distance before producing much elevation of the mucosa, while in the former the enlarged follicles are very shortly circumscribed and very early project above the surface of the surrounding mucosa. The nodules in pseudo-leucæmia frequently ulcerate at their central points owing to deficient blood supply, a tendency entirely lacking in the enlarged but well vascularized follicles in the former condition. In most cases of pseudo-leucæmia of intestinal type there are some distinctly pedunculated polypoid outgrowths, considerably exceeding in size any of the hyperplastic nodules yet reported in cases of the lymphatic constitution.

In the majority of the cases of lymphatic constitution the enlargement of the lymph nodes does not pass beyond the limits of what may be called a physiological hypertrophy, and bears little resemblance to a tumor formation. The spleen is rarely much enlarged. The presence of considerable pigment in the spleen pulp is too ordinarily seen to be interpreted positively as the result of an excessive blood destruction, such as characterizes the severe anæmias. Yet it must be admitted that the very considerable degree of pigment deposit reached by the two cases referred to above indicates that in some instances the blood has suffered severely. These children are, however, not usually anæmic, but in excellent health, and even the sickliest of them do not resemble cases of infantile leucæmia, pseudo-leucæmia (von Jaksch), or chlorosis. As for the hyperplasia of the lymphoid marrow, it may be said that the normal limits of lymphoid marrow are as yet by no means definitely settled. Such hyperplasia may be seen also in the secondary anæmias, and in any case the hyperplasia of the lymphoid marrow may be regarded as merely a part of the general and more or less physiological hypertrophy of the lymphoid structures of the body.

It is worth noting, in this connection, the apparent possible explanation of some cases of lymphocytosis in children, which is so frequently observed at this age, and has at present little definite significance. It might be expected that a general lymphatic hyperplasia would lead to a lymphocytosis such as was present in the writer's case to a marked degree. That all children showing persistent lymphocytosis are subjects of the lymphatic constitution can not now be asserted. In the writer's experience, children with extreme lymphocytosis may at least survive severe attacks of diphtheria. Nevertheless, it must be regarded as possible that the persistent lymphocytosis of childhood may at times be a tangible expression of general lymphatic hyperplasia and of the lymphatic constitution.

Relation to Rhachitis.—In a considerable proportion of the reported cases of *constitutio lymphatica* more or less pronounced evidences of rhachitis have been found.

Professor Kundrat described as primary vegetative disorders those anomalies of growth whose cause we do not know, and which we must refer to a congenital predisposition. Rhachitis he specially emphasizes as representing not only a disturbance in bone formation, but a profound and general vegetative dyscrasia. This view of the pathology of rhachitis, which is, of course, the one in general acceptation, is here mentioned in order to emphasize the fact that the coincidence of rhachitis, which is not an essential feature of the lymphatic constitution, must be regarded, with the hypoplasia of the heart and arteries, as further evidence of some deep-seated constitutional weakness.

It is interesting in this connection to recall the fact without speculating upon its significance, that a large percentage of rhachitic children have a hypertrophic spleen, which is, however, according to the recent conclusions of Starck, not uniformly proportionate to the grade of rhachitis, but rather to the degree of anæmia.

The coincidence of rhachitis and enlargement of the spleen with hyperplasia of lymph nodes, especially the mesenteric nodes, was long since noted by Dickinson and Glisson.

Significance of Enlargement of the Thyreoid in the Lymphatic Constitution.—In nine of the seventeen cases collected by Kundrat, in three of seven referred to by Paltauf, and in one of the writer's two cases—*i. e.*, in more than fifty per cent. of twenty-six cases—the thyreoid gland was found enlarged. Of the significance of the goître in this connection it is rather difficult to judge. There is, however, abundant evidence to show that some sympathetic relation exists between the thymus and thyreoid.

Beclard found an enlargement of the thyreoid after extirpation of the thymus, and enlargement of the thymus after extirpation of the thyreoid, in animals capable of surviving the loss of these organs. As shown by Kundrat, enlargement of the thymus has been found in Basedow's disease by Möbius and by Spencer, and hypertrophy of lymph nodes, tonsils, and intestinal follicles has been noted in the same disease by several observers (White, Gowers). The liability to sudden cardiac paralysis, which is often the prominent feature in the death of subjects of the lymphatic constitution, finds at least a partial counterpart in the persistent tachycardia of Basedow's disease. Müller believes that a congenital or acquired neuropathic constitution is an essential element in the production of exophthalmic goître.

Exciting Causes and Manner of Death of Subjects of the Lymphatic Constitution.—The majority of cases thus far reported have died as the result of chloroform narcosis. One case reported by Heusler died after ether narcosis and the loss of considerable blood. Death may apparently occur at any stage of the narcosis, during the first few inhalations or even after apparent recovery from the effects of the anæsthetic.

Two patients survived a first administration of chloroform to perish some months later during a second or third operation.

The usual signs of danger may be observed; the patients may respond to treatment for a time, and a few feeble respiratory movements may be elicited for some moments, or for a considerable period, or the cardiac and respiratory paralysis may be instant and complete. In all of these particulars these cases have presented no distinguishing peculiarities.

Seven reports by Nordmann and Paltauf refer to the sudden death of persons who fell into the water, and although immediately recovered were yet dead, or who died suddenly while bathing.

In none of these cases were the ordinary signs of death by drowning to be found, but the usual evidences of the *constitutio lymphatica* were present.

Other persons died suddenly during the excitement of card playing, or fell dead on the street while engaged in ordinary exertions.

The sudden death of the young son of Professor Langerhans, of Berlin, immediately after the injection of a preventive dose of diphtheria antitoxine has called forth considerable discussion as to the probable cause of this sudden fatality, and has been variously explained by Langerhans. Eulenberg, and Pürkhauser. Paltauf suggests that this and other similar cases may find their true explanation in the presence of the *constitutio lymphatica*.

It seems probable, from the considerations relating especially to hypoplasia of the heart and arteries, that some rapidly fatal forms of the infectious diseases, and some sudden fatalities during convalescence from these diseases, may be in part referable to the *constitutio lymphatica*.

It must be emphasized, however, that the data are as yet entirely too limited to indicate definitely the scope of the *constitutio lymphatica*, and until the observations have been very considerably extended it will be well to observe extreme caution before attributing miscellaneous cases of sudden death to the lymphatic constitution.

The manner of death usually indicates a cardiac paralysis, which may or may not be combined with immediate failure of respiration. Of the chain of events by which this result is reached little is known. That the cardiac muscle in these subjects is specially susceptible to the effects of chloroform may naturally be supposed. Very slight importance can at present be attached to the mechanical irritation or pressure of the enlarged thymus. We are therefore compelled to content ourselves with the statement, very plainly supported by clinical experience with these cases, that the subjects of the lymphatic constitution, for unknown reasons, are specially susceptible to reflex cardiac paralysis.

The Diagnosis of the Lymphatic Constitution.—Since it is claimed that the majority of deaths from chloroform are referable to the *constitutio lymphatica*, it becomes a matter of importance to be able to recognize the condition during life. Unfortunately, in the present state of our knowledge this is in many cases impossible, yet a thorough examination of the patient will probably disclose one or more suspicious signs.

It may be possible, first, to elicit physical signs indicative of hypoplasia of the heart and aortic system of arteries, although the conclusions thus reached will be regarded by conservative clinicians as very uncertain.

Fraenkel, Rauchfuss, and Quincke call attention to the dilatation of the left ventricle, which usually results from a narrowing of the aorta. They also recommend the examination of the peripheral arteries, which may be found distinctly narrowed and of increased tension. Ortner has noted in his cases of narrow aorta an absence of aortic pulsation in the neck, which he regards as a pathognomonic sign of hypoplasia of the aorta, if found in a muscular subject. As already mentioned, hypoplasia of the heart and arteries is frequently associated with an infantile or defective development of other organs and tissues, especially of the sexual organs, the condition of which it may therefore be well to ascertain.

In some of the reported cases the diagnosis was suggested by the absence of pubic hair, by the very late establishment of menstruation, and from a uniformly contracted condition of the pelvis. Yet even granting that attention to the above minutiæ may occasionally give rise to a strong suspicion of hypoplasia of the aorta, it is not to be supposed that every case actually presenting this anomaly is a subject of the lymphatic constitution, so that, practically, the diagnosis of this anatomical feature will usually be restricted to the post-mortem table.

Likewise, the prevalence of rhachitis is too general to warrant more than a suspicion that this disease may be associated with the lymphatic constitution, and its presence can only serve as a warning that the two conditions sometimes coexist, rendering the subject a dangerous one for the administration of chloroform.

Of greater diagnostic import is the discovery of a general or local hyperplasia of the superficial lymphatic structures. Enlargement of the faucial, lingual, or pharyngeal tonsils, especially if accompanied by enlarged cervical, axillary, or inguinal lymph nodes, should at once arrest attention. In one of Kundrat's cases there were distinct flat deposits of lymphoid tissue along the base of the tongue and about the epiglottis, and in another the retropharyngeal nodes were moderately enlarged. In one of the writer's cases the enlarged mesenteric nodes formed a tumorlike mass that could readily have been detected by abdominal palpation. In young subjects it may sometimes be possible to elicit dullness from the enlarged thymus.

The demonstration of a well-marked lymphocytosis in one of the writer's cases, a condition which may reasonably be expected to frequently accompany general lymphatic hyperplasia, suggests that the examination of the blood may give a reliable indication in some cases of the *constitutio lymphatica*. The lymphocytosis of early life, which has been rather frequently observed, has as yet acquired little or no significance, and although the suggestion is based upon a single observation, that alone would seem sufficient to urge that the condition of the blood should be noted in every suspected case.

In conclusion, it must be admitted that while the studies of the Vienna observers seem to have placed the existence of the *constitutio lymphatica* upon a firm basis in pathology, the observations yet remain far too limited to fully demonstrate the truth of an hypothesis which connects a large class of sudden deaths with simple hyperplasia of the lymphatic structures of the body.

It has been deemed advisable, therefore, to place the present cases on record, and it has been the further object of this paper in outlining the chief anatomical features of the lymphatic constitution to urge the claims of the subject to more general attention, especially from those in charge of medico-legal autopsies.

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CHRONIC URTICARIA:

WITH SPECIAL REFERENCE TO ITS ÆTIOLOGY AND TREATMENT.[*]

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HIVES! The name calls up from the more or less remote past more or less disagreeable recollections of the hours or days we, as boys, suffered from the itching of hives. The disease is, without doubt, very common in its acute form, far more common than our statistics would show. The latter are at fault because every woman of any experience recognizes the eruption; exclaims, "Only hives!" gives her favorite laxative to Johnnie, and knows that in a day or so all will be well. It is only when "a day or so" passes and still the wheals continue to appear that the child is brought to us. A few simple directions as to diet; a few doses of rhubarb and soda; a few applications of an alkaline or acid lotion, and the little patient is well, to be troubled no more until another indiscretion in diet causes him to blossom as the rose.

While this is the course of acute urticaria, that of the chronic form is very different. While few diseases are more easy to manage than acute urticaria, I know of none more difficult to cure in some instances than the chronic form. It is not that the wheals are permanent or chronic, because they come and go with the same suddenness as in the acute form. It is the constantly recurring outbreaks of wheals that constitute chronic urticaria. It may be that the patient will experience relief from his eruption for a few days and think himself well, only to find that a fresh outbreak throws him back to where he was before. The disease may last months or years, and, while it does not cause death, it renders its victim so very uncomfortable that he often wishes he were dead.

The rational treatment of disease is to seek out its cause and then endeavor to remove it. Unfortunately, in many of the diseases which we are called upon to treat we are by no means sure of *the* cause, and are compelled to use more or less empiricism in our practice. Still, the first step in the treatment of chronic urticaria is to endeavor to find out what ails the man, and the next is to try and improve his condition. Let us now inquire into the causes thought to be active in producing chronic urticaria, as given by many authorities.

Gastric or intestinal derangements head the list, as in the acute form. In the chronic form it is less likely that it is any one particular article of diet that causes the trouble, but rather a toxine, a ptomaine resulting from imperfect digestive processes. Allied to this we have as causes all those diseases in which a poisonous substance circulates in the blood, such as diabetes, gout and rheumatism, alcoholism, certain drug intoxications, pregnancy, though hardly a disease, and malarial cachexia. Funk and Grunzbach [*] go so far as to affirm that almost all the cases of chronic urticaria in children are due to dilatation of the stomach. Of course, in such a condition we must expect the development of ptomaines. But after all these causes are given due weight there seem to be some cases in which they are not operative, in which the cause seems to be a neuropathic condition. We meet with it in hysteria, and several cases have been reported of its occurrence in Basedow's disease. Perhaps, also, we should place here the nervous depression of malaria. To say that it is due to idiosyncrasy or to abnormal irritability of the skin is but another way of saying that it is sometimes due to neuropathic conditions. One author would seek in a diminished coagulability of the blood the cause of some cases.[†]

Given the urticarial tendency, the irritable skin, the eruption may be absent for a good part of the day, to appear regularly toward evening. In such a case it would seem that as night approaches and the nervous energy has been more or less expended during the day, the toxine gets the upper hand and the eruption appears. Other cases will be free from eruption until the skin is subject to some temperature change, perhaps from warm to cold, or the reverse. Thus, it is commonly worse at night, as the patient takes his clothes off and gets into bed. These facts seem to strongly support the nervous theory of the disease.

As this is a family party, let us relate our individual experience with chronic urticaria, so that we all may know what we have been doing, and what the results of our observations have been. It is with the hope of eliciting discussion that I have chosen this subject. We all, whether engaged in special or general practice, must have run across cases of chronic urticaria, and have tried with more or less success to cure them. In looking over my records of private cases I find that the sexes are about equally affected. In two of my cases the disease first showed itself in childhood, and in one in infancy, while in one case the subject was fifty-nine years old before the urticaria began. Most of the cases were in adults before middle life. In all of them there was some digestive disturbance, as shown by coated tongue, constipation, eructations, discomfort after eating, and the like. The diet was bad in many of them; thus, two patients smoked to excess, and one lived mostly on whisky, meat, and pastry. No one of them was in good health, all of them being nervous, worried over small things, pale, and of pasty complexion. Most of them did not take any form of regular exercise in the open air. Some of them were worse in summer and some in winter. Most of them followed the usual rule of growing worse toward night, and being specially affected when they took off their clothes and became warm in bed.

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[*] Read before the Society of the Alumni of the City (Charity) Hospital, March 10, 1897.

[*] *Monatshft. f. prkt. Dermat.*, 1894, xviii, 109.

[†] A. E. Wright. *British Journal of Dermatology*, 1896, viii, 82.

These observations only substantiate what is set down in the text-books—namely, that disorders of digestion are the most prominent factors in the ætiology of chronic urticaria. In whatever way it begins, the patient sooner or later develops into a nervous individual. In some cases neurasthenia seems to be the primary factor. In the cases that begin in infancy it is very hard to say whether error in feeding, so common at this time, or an unstable nervous system is the basis of the trouble. So, too, it is hard for us to say whether in adults the nervous debility is primary, inducing the disorders of digestion and the urticaria, or whether the digestive disturbances induce the nervousness and the urticaria. My impression is that in most cases the second is the sequence of events; but at the same time I believe that the chronicity of the urticaria is due to a neurosis. In many cases we can succeed in greatly improving the digestion, but still the urticaria continues, though perhaps in a mitigated form. It is certain that in very many cases an external irritation produces the eruption. We have, then, an irritable skin, the urticarial tendency, due to a neurotic disturbance, and an irritation, the contact of heat or cold, or scratching to relieve the itching, and then the eruption of the lesion of urticaria, the wheal.

Having now reached an idea of the causes of the disease, we are prepared to treat it with some degree of intelligence. Unfortunately, we have to do with two most obstinate factors, nervousness and digestive disturbances.

I am free to confess that I have found the disease in almost all the cases a most obstinate one to cure. My first effort is always directed to correcting errors in diet and general hygiene. In order to put my best foot foremost I would cite the most brilliant case I have had. It was in a girl of fifteen years of age who had had the disease in a very bad form for eight years. Her father was a physician, and the patient had taken a great many drugs, as advised by a number of his friends. It seems to be the first impulse of very many doctors to prescribe drugs, and it does not seem to occur to them to try to improve the condition of their patients by any other means than by drugs. I found this girl nervous, pale, constipated, dyspeptic. Under a plain diet, eight glasses of water in divided doses during the day—one glass with each meal, one glass two or three hours after meals, one on rising, and one on going to bed—having her walk for two hours a day in the open air in all sorts of weather, and after a while giving her iron and nitrohydrochloric acid, she was well in two months and remained well. I met the father a couple of years after last seeing the patient and he told me that the girl had not had any more urticaria.

In several other cases of years' duration the same regulations of diet and exercise wrought similar results. In none of the cases was reliance had upon these means alone, but everything I knew of was done to build up the general health. To this end calomel, or rhubarb-and-soda mixture, or the like, was given to regulate the bowels; iron, with or without arsenic and strychnine, was administered as a tonic, and one case seemed to be much helped by the compound syrup of the hypophosphites.

It is pertinent for you to ask me what I mean by strict diet. I cut off tea, coffee, and rich soups. Where a patient digests milk, that is made the principal article of diet for a week or two. All pastries, cakes, candies, and such tidbits are forbidden, as are pork, veal, hot griddle cakes, fresh bread, oatmeal, all articles fried in fat, and anything that the patient knows from experience that he can not digest. He is instructed not to eat more than three or four articles of food at one meal. In cases where the general nutrition is low I give him eggs, raw or slightly cooked, commencing on two a day and running up to as many as fifteen, giving them both at meals and between meals. At first he may object, but soon he does not mind them, and in many cases this forced feeding is most beneficial. Of course, when on egg diet the amount of other food must be reduced.

As to drugs given for their supposed special effect upon the urticaria, I have tried salicylate of sodium, salol, menthol, pilocarpine. The salol seemed to make every case worse. Salicylate of sodium has occasionally been useful. Pilocarpine failed to do any good in the one case in which it was used. Menthol, a grain and a half in the oil of sweet almonds, six times a day, checked the eruption for two weeks in one case.

The local treatment is important. In some cases soda baths, and in some vinegar baths, taken just before going to bed, enable the patient to sleep. They should not be hot, but tepid, as hot baths often make the eruption worse. Salt sea baths are very grateful to some skins, and one of my patients thinks they are the only remedy. Others find relief in extract of witch-hazel. Alcohol, cologne water and chloroform relieve the intense itching, especially when they are used as a fine spray from an atomizer. Lotions of soda, vinegar, carbolic acid, and a host of other things relieve when dabbed on the skin. If baths are used, the patient should be instructed not to rub the skin dry after leaving the bath, but to have a large warm sheet ready against getting out of the water, which should then be wrapped about him, and the skin dried by tapping. After this the skin is to be smeared over with vaseline, and freely powdered with Oswego or other cornstarch from a flour dredger.

Nearly all the drugs that are supposed to have a sedative or tonic effect on the nerves, such as arsenic, bromide of potassium, antipyrine, phenacetine, acetanilide, gelsemium, belladonna, and atropine, have been given for the relief of this most distressing disease, and have their warm advocates. The last two are given also for their effect on the blood-vessels, as is ergot. The spinal douche and galvanism down the spine have also been employed to improve the nervous condition, and circumcision has its advocates on the supposition of the disease being a reflex. Pilocarpine, both hypodermically and by the mouth, has proved useful in some hands on account of its action on the circulation of the skin. Wright, who believes in the want of coagulability of the blood as a cause of urticaria, reports cases benefited by calcium chloride in twenty-grain doses three times a day, the amount being reduced as the patient improves. Quinine is, without doubt, valuable in malarial cases, and also as a nerve tonic. E. Stern * speaks warmly of the iodide of potassium, giving about three grains three times a day. In so chronic a disease it is well to have many means of treatment at hand, and in this list, which doubtless could be made longer, wide choice is offered.

If you ask me what is the best treatment for chronic urticaria, I would say: Do all you can to improve the general condition of your patient; be most particular to instruct him as to what he shall eat and drink, and as to the amount of exercise he shall take; give him alkaline or acid baths, whichever are most agreeable to him, and rely on these methods rather than upon any specific medication. You will find that the disease is a most obstinate one in many cases, if your experience accords with mine. If the case does prove very obstinate, send your patient out of town, away from the hundred worrying cares of home and business. This in many cases is the sovereign remedy for the cure of chronic urticaria.

ON THE PRODROMIC STAGE, THE EARLY RECOGNITION, AND EARLY TREATMENT OF DIABETES MELLITUS.

By HEINRICH STERN, PH. D., M. D.

THE term diabetes mellitus is a symptomatic designation, and is used as a synonym for a more or less complicated chronic glycosuria. The non-existence of glycosuria or its disappearance is deemed by even the most recent writers sufficient evidence of the absence of diabetes mellitus.

True, the term itself only implies a well-defined condition and signifies neither a preglycosuric nor a postglycosuric stage, but simply the presence of dextrose or glucose in the urine. It stands to reason that a condition as grave as diabetes mellitus is universally considered to be does not develop independently and spontaneously, and that it, on the contrary, can be only indicative of a single stage in the process of a certain type of molecular or somatic deterioration. In other words, diabetes mellitus is only a link in the chain of symptoms and conditions which make their appearance during the course of a progressive type of deterioration; it has its forerunners and its continuations, its initiatory symptoms and its consequent factors.

The term diabetes mellitus is therefore not an appropriate one for the general degenerative process in question, and only for the sake of convenience I shall employ it in the following.

From the physiologico-chemical as well as from the clinical standpoint, diabetes mellitus may be divided into three great stages: First, the prodromic or preglycosuric stage; second, the period of glycosuria or diabetes mellitus proper; and, third, the postglycosuric stage, or the period of ethyl-diacetic-acid poisoning.

The preglycosuric stadium has hardly been recognized by any experimenter. The postglycosuric stage does not completely exclude glycosuria, but is always recognizable by a diminished flow of saccharine urine and the presence of acetone in excess, of ethyl-diacetic and of levorotatory oxybutyric acids.

This third stage of diabetes mellitus is the consequence of the second period, is more or less pronounced and defined, and its duration varies. Diabetes mellitus proper, the second stadium, I consider the transitory period, and as such not dangerous to the life of the patient, and it is only to be feared as the forerunner or premonitory factor of a chronic and almost always severer poisoning and auto-infection. If proper agencies are employed during this second stage, the course of the disease may become arrested or modified, and the third stage may be averted. The conditions and the factors which caused the first diabetic deterioration are, however, always in a latent state, and the patient who has once had glycosuria is always predisposed to future attacks.

Strictly speaking, there are no prodromes of diabetes mellitus in the sense in which I use the latter term, and the prodromic stage is not the forerunner, but virtually the onset of the disease itself. The prodromes pertain as such to the diabetes mellitus proper, but are the initial symptoms of the general deterioration.

From April, 1894, to April, 1897, there came under my observation and care thirty-two cases of what I consider diabetes mellitus in its prodromic stage. Of these, seventeen occurred in males and fifteen in females. The ages of the patients varied from the eleventh to the fifty-third year. Of the thirty-two cases, fourteen have since turned into glycosuria of varying degrees; eleven

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* *Münch. med. Woch.*, 1890, xxxvii, 687.

are cured, or are seemingly improving; six I have lost sight of, and one patient is said to have died in the West. If I deduct the last seven cases there still remain twenty-five patients whom I have seen within the last month.*

Case.	Initials.	Sex.	Age.	Native.	Diathesis other than diabetic; collateral and intercurring affections.	Relative afflicted with diabetes mellitus.†	Remarks.
1	T. S.	Male.	30	America.	Syphilis.	Sister.	Improving.
2	M. G.	Male.	47	America.	Gastrocholia.	Father + D.	Improving.
3	A. M.	Female.	38	Denmark.	Valvular disease.	Mother + D.	Improving, latent.
4	H. C.	Male.	41	America.	Chronic interstitial nephritis.	Father + D.	Developed glycosuria.
5	E. Z.	Female.	11	America.	Albuminuria.	None.	Developed glycosuria.
6	S. F.	Male.	53	Poland.	Prostatitis.	Mother + D., brother.	Developed glycosuria.
7	S. S.	Male.	23	America.	Syphilis.	Father + D.	Developed glycosuria.
8	I. S.	Male.	51	Germany.	Neurasthenia.	No history.	Lost sight of.
9	F. R.	Female.	38	Germany.	Neurasthenia, hæmophilia.	Mother + D.	Developed glycosuria.
10	J. S.	Male.	48	America.	Hæmorrhoids.	Brother.	Developed glycosuria.
11	W. T.	Male.	28	America.	....	No history.	Cured.
12	E. F.	Female	50	France.	Hepatic torpidity.	No history.	Developed glycosuria.
13	F. W.	Female.	34	America.	Interstitial nephritis.	Father.	Cured.
14	R. V.	Female.	29	America.	Tuberculosis.	Father.	Improved.
15	M. D.	Female.	38	America.	Uric-acid diathesis.	Father + D., sister + D.	Improved.
16	E. L.	Male.	15	America.	Tuberculosis.	Father + D.	Cured.
17	S. J.	Female.	19	America.	Fatty degeneration of heart.	Father + D.	Lost sight of.
18	J. P.	Male.	24	Germany.	....	Mother.	Improving.
19	A. H.	Male.	25	Germany.	....	Father + D.	Developed glycosuria.
20	S. M.	Female.	29	America.	Floating kidney.	Father + D.	Lost sight of.
21	J. A.	Male.	49	Ireland.	Alcoholism.	No history.	Developed glycosuria.
22	A. C.	Male.	39	France.	Tuberculosis.	Father + D.	Developed glycosuria.
23	W. H.	Male.	31	Germany.	Uric-acid diathesis.	No history.	Lost sight of.
24	H. P.	Female.	38	America.	....	Mother + D.	Said to have died.
25	G. G.	Male.	35	England.	Uric-acid diathesis.	No history.	Developed glycosuria.
26	E. R.	Female.	32	Germany.	Tuberculosis.	No history.	Lost sight of.
27	C. C.	Male.	49	America.	Neuralgia.	No history.	Developed glycosuria.
28	M. R.	Female.	27	Germany.	Tuberculosis.	Sister.	Lost sight of.
29	H. O.	Female.	36	Germany.	Tuberculosis.	Brother.	Developed glycosuria.
30	E. R.	Male.	44	Austria.	Prostatitis.	No history.	Improving.
31	M. K.	Female.	44	Germany.	Atheromatous and fatty degeneration.	Mother + D.	Improved.
32	M. H.	Female.	40	Germany.	Epilepsy.	Mother + D.	Developed glycosuria.

If I further deduct the eleven cured or improving cases, on account of a possible wrong diagnosis, there still are to-day fourteen patients under my care who have had glycosuria and in whom, on account of the precursory conditions and symptoms, I recognized a preglycosuric stage of diabetes mellitus. In short, at least fourteen cases out of twenty-five, or at least fifty-six per cent., were recognized as diabetes mellitus before the urine became saccharine. I am, however, convinced that the eleven cured or improving patients to the greater part also were or still are diabetics in the first stadium of the disease, and in whom the further deterioration did not occur. If we accept the latter, the percentage of correctly diagnosticated cases of preglycosuric diabetes would still increase.

Before enumerating the clinical symptoms of incipient diabetes I should like to say a word on the hereditary transmission of a diabetic diathesis, with especial reference to my thirty-two cases. Twenty-two of my patients admitted the occurrence of diabetes mellitus in one or more members of their immediate families, while ten were not able to give me any information, or denied its existence so far as the other members of their families were concerned.*

As the result of my individual experience I have come to these conclusions: Neither glycosuria *per se* nor the general diabetic deterioration is inheritable, but a diabetic diathesis may be transmitted from the parent to the offspring; the heredity of diabetes means the transmission of diabetes-producing conditions and factors, and not of the affection itself. This diabetic predisposition is the more pronounced the less the environment and the mode of life of the descendant have changed from those of the parent. Diabetes, being not a disease of primary anatomical lesions, is caused by alterations of a chemical nature. The latter are not only the cause, but in a great many instances the result, of functional disturbances. These, if the surroundings and general conditions have remained the same or have become analogous, are most liable to recur in the offspring. Were it not for the family history in regard to chronic glycosuria I should never, in many instances, have suspected a preglycosuric diabetes in my cases—especially not at the time when I *first* began to make observations about such a stage of this deterioration.

A number of gastro-intestinal disturbances of no special diagnostic value generally prevail upon the patient to apply for medical aid. It is for these irregularities and conditions mostly that a beginning diabetic is first brought into contact with a physician. A prominent phenomenon in the beginning diabetic is his intolerance of carbohydrates and occasionally of hydrocarbons. Another still more general but somewhat later-appearing symptom is a more or less pronounced hyperchlorhydria, a hyperacidity of the gastric juice with well-marked nervous disturbances. Gastrocholia and hepatico-pancreatic disturbances are generally in the train of symptoms, while intestinal obstruction is not met with any more frequently than is vicarious diarrhœa.

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* While I was preparing this article, patient No. 31 met with an accident and has died since.

† This list is compiled according to the statements of the respective patients, but it is to be assumed that these patients, in many instances, were not aware of the existence of diabetes in other members of their families. The statement that a member of a family died after having been diabetic means that he had diabetes and died; it does not necessarily indicate that he died from diabetes.

* These ten patients, with a few exceptions, were of foreign birth, and came to this country at a period when life insurance was not so common and general an institution as it is to-day in the United States; and as diabetes in a great many instances is never suspected or detected before an examination for life insurance has taken place, it stands to reason that the family history related by these ten patients, in this respect, is at least not very definite.

In the epigastric region there is often felt a sickening pain, which increases shortly after eating and upon pressure. A dull pain, also increasing upon pressure, is occasionally to be found in the right hypochondriac region, while in the median line of the abdomen, around the umbilicus, there is sometimes a feeling of incessant tensiveness, due, no doubt, to polysarcia.

A most prominent and general clinical symptom of the prodromic stage of diabetes mellitus is obesity. In nine cases out of fourteen which have turned into chronic glycosuria polysarcia was conspicuous. Contrary to expectations, the patient in this stadium is not a great eater, nor does he consume much fluid. Excessive appetite and thirst are indicative of a later period, when glycosuria or hyperglycæmia are already established.

The diabetic polysarcia of the prodromic stage is a forerunner of diabetes mellitus proper, and disappears to a more or less extent as soon as dextrose is eliminated. Von Norden * points out the relationship between obesity and diabetes thus: "There are cases in which the oxidation of sugar as well as its conversion into fat is equally confined. Glycosuria of different degrees and emaciation is the result. This is the common type of diabetes. There are other cases in which only the oxidation of sugar and not its conversion into fat is limited. Obesity will be the result. This is a masked diabetes. Such cases may develop later into cases in which the oxidation of sugar is limited, and where the storing away of the carbohydrates into the adipose tissue becomes also moderately impaired. Glycosuria appears then in addition to obesity."

I can not fully coincide with this view, because—

First, the excretion of glucose or of a dextrose resembling carbohydrate, in my opinion, is not directly dependent upon alimentation.

Second, liposarcous diabetics (those who were emaciated already at the onset of the glycosuria), in my experience, almost always suffered from tuberculosis or some other cachexia, and were in many instances afflicted with alimentary glycosuria and not with genuine diabetes. The early emaciation in idiopathic, genuine diabetes is not so common as is generally supposed.

Diminution of sexual inclination is another frequent phenomenon during the prodromic stage of diabetes. It is met with in both sexes, but the reproductive capability does not seem to be noticeably affected. When genito-urinary neuroses accompany the general disorder we find great nervous irritability, occasionally hypochondriasis, and very frequently polyuria. Oliguria is of much rarer occurrence in these instances, but I encountered it in a few of my cases.

The declination of sexual excitability happens independently of the corpulency heretofore mentioned; occasionally the latter might be responsible for it, but it seems to me that both obesity and diminished inclination are the result of common causative factors—in this instance, of a general diabetic deterioration. Sexual inclination grows less in a great number of wasting diseases, and would therefore be of no special significance in the recognition of the preglycosuric stage of diabetes; but it must be remembered that this stadium of diabetes, *per se*, does not show any emaciation, that it is the onset of a general deterioration, with no traceable symptom of actual waste.

The cutaneous surface is in nearly every instance the seat of disorders during the prodromic stage of diabetes. The patient may complain of superficial, more or less annoying shooting pains, or of itching (dermatalgia) over the scapula, the sternum, the ribs, or over the entire cutaneous surface; occasionally pruritus may exist in the scrotal integument and dartos during the preglycosuric stadium.* The functional activity of the skin is already impaired in the prodromal state. Perspiration and transpiration are markedly affected. Partial anidrosis of a chronic nature is often established, and the skin may become in some locations noticeably drier, notwithstanding an eventual increased obesity. The direct result of the diminution or suppression of transpiration (lungs and skin in the normal individual excrete more than sixty per cent. of all the waste products of the body) will be overloading of the blood with carbonic dioxide and effete matter, which again give rise to other disorders.

To obtain sufficient quantities of cutaneous secretion for analyses, I resorted in some cases to artificial means (camphor, pilocarpine, and strychnine), but in no instance have I found glucose in the sweat during the prodromic stage of mellituria.

The oligydria becomes more pronounced and more general the more the disease approaches the second stadium.

Furuncles may appear early in the disease, and I am of the opinion that they are indicative of a slow, protracted, and mild attack. Cases with early boil formations readily yield to rational treatment; further progress of the diabetic deterioration becomes either retarded or completely arrested.

I met with some other cutaneous affections, as eczema, erythema, and lichen, during the incipient stage of diabetes, but I can not say that their occurrence is of any value in the early recognition of this disease. These and similar cutaneous disorders seem to announce a somewhat later period in the course of the affection, when polyuria or occasional azoturia have already appeared.

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* Zur Frühdiagnose des Diabetes mellitus. *Verhandlungen des dreizehnten Congresses für innere Medicin*, xiii.

* In the case of a policeman (No. 27 of the table) with incipient diabetes, I found the pruritus of the scrotum so severe that nothing short of a twenty-five-per-cent. cocaine solution afforded any relief.

One or two of the heretofore-mentioned symptoms are *per se* certainly no indication of a prodromic stage of diabetes; the general train of symptoms, however, especially the phenomena in their succession and their course, should always lead us to suspect an active diabetic deterioration. In a great many instances, especially when a diabetic diathesis of the family has been proved, a positive diagnosis may be formed.

In short, the diagnosis of a prodromic stage of diabetes mellitus may be made in the order of succession of symptoms, a part of the family diabetic diathesis, by—

1. Gastro-intestinal disturbances, intolerance of carbohydrates and occasionally of hydrocarbons, hyperchlorhydria, gastrocholia, and hepatico-pancreatic disturbances.

2. Sickening pain in epigastric region, increasing after eating and upon pressure. Dull pain in right hypochondriac region, sometimes tensiveness around the umbilicus.

3. Polysarcia, disappearing as dextrose is eliminated; no excessive appetite or thirst.

4. Diminution of sexual inclination; great nervous irritability and occasional hypochondriasis, when genitourinary neuroses are accompanying; no emaciation if diabetes is occurring independently of any other diathesis.

5. Disorders of the cutaneous surface; dermatalgia; diminution or suppression of perspiration and transpiration; overloading of blood with carbon dioxide.

(The urine during the preglycosuric stage, with the exception of an occasional azoturia, an increased excretion of nitrogenous matter, is quite normal; blood during this time does not contain any excess of glucose nor fat particles, and the proportion of the red blood-corpuscles to the leucocytes does not seem to be noticeably altered. The sweat is free of glucose.)

When once diabetic deterioration is recognized, an energetic rational treatment should be instituted without delay. This treatment should be of a hygienic and dietetic, as well as of a medicinal, nature.

The very first thing which ought to be done with the patient, when and wherever circumstances permit it, is to send him to another soil and to another climate. The more the latter differ (within the proper limits) from those whence he came, the more pronounced and the sooner will their beneficial influence be exerted upon the patient. That which is sound and healthy in an organism acclimatizes itself more readily than that which is degenerating within it. The process of acclimatization is the most powerful stimulus which can be exerted upon animal matter; it influences not merely one organ and one function, but the whole system and all the vitality. The changed external conditions bring about a regeneration, and if an eventual deterioration has not progressed beyond a certain point, the regained vital energy will in many instances do away with functional disturbances and ward off or even prevent molecular death.

I am in the habit of using air baths with my patients. At an ordinary temperature they sit undressed in their rooms, or, what is still better, they perform gymnastics to promote an increased activity of the skin; only in exceptional cases do I let the patient expose himself to purposely heated air, but in every instance chilliness should be guarded against. Warm water baths or steam baths and massage are also valuable accessories in the stimulation of perspiration and transpiration. Both exposure to the air and gymnastic movements, and the warm water and steam baths are excellent promoters of sleep.

Warm underclothing, in the heated as well as in the cold season, is essential during the prodromal stage. The cutaneous surface should never be allowed to become chilled, so that the excretion of effete matter is not interfered with.

A moderate amount of walking is beneficial in many cases, but the patient must never tire himself out, especially not in the daytime.

Dietetic measures, as exclusion of carbohydrates, play an integrant and very important part in the modern treatment of diabetes mellitus, and this without any scientific basis.

It stands to reason that alimentary diabetes, which has nothing in common with diabetic deterioration, will more or less disappear as soon as starchy and saccharine food stuffs are withdrawn.

In other transitory forms of diabetes—those cases which take their origin in hyperneuria and excessive irritability of some part of the nervous matter—the glucose may also occasionally disappear after the withdrawal of the carbohydrates. In no case of true diabetic deterioration, however, has the exclusion of these all-important food stuffs ever produced a cure. On the contrary, "the complete and sudden deprivation of the system of bread stuffs it has heretofore been accustomed to undoubtedly produces more harm in a diabetic patient than a moderate use of that article of nutriment. (To stop wholly the saccharine supply is also not what is wanted, for, were we to do so, we would finally arrest every function of animal life.)" *

The glucose- or the dextrose-resembling carbohydrate of true diabetes mellitus is not directly dependent upon alimentation. This has been proved again and again by clinical experience. Even in such cases of diabetic deterioration in which nearly all the nutriment is of a nitrogenous character we still find glycosuria and hyperglycæmia; this tends to show, at least, that the carbohydrates as food stuffs do not participate directly in the production of glucose in true diabetes, but it also demonstrates the possibility that if proteid substances which serve as nourishment can be converted into a substance closely resembling dextrose, the albuminous matter of the organism itself may also undergo a glucosic degeneration. In other words, the glucose of genuine diabetic deterioration may be derived from a retrograde metamorphosis of the tissues or from some component part thereof. This tissue degeneration is not of a molecular-anatomical character, and only secondary morphological lesions, if any at all are detected, are found in necroscopies; this degeneration consists of alterations of a chemical nature within the tissue matter. It is, perhaps, the excessive amount of non-excreted carbon dioxide which aids materially to bring about the changes in the cellular substance, and which, plus some degenerating proteid matter, causes the formation of a dextrose resembling carbohydrate, of acetone, of ethyl-diacetic acid, and of a variety of other chemical combinations.

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* A Rational Diabetic Flour. By Heinrich Stern. *Medical News*, June 8, 1895.

Dietetic measures, however, are nevertheless of great value in the treatment of the prodromal stage of diabetes. But their importance lies in a different direction. The proverbial frugality and temperance of former times have to-day yielded to progressing gormandizing and free living among the lower and middle classes. So universal and common has intemperance in food become to-day that we even do not recognize it any more as such. Three or four square meals a day, with their enormous excess of all classes of food stuffs, are deemed just the proper thing; ingesta, as rare or disgusting delicacies, which can not be digested at all by the healthy stomach, are swallowed because it is the fashion, and this mostly at an hour when the body should repose. It is the over-indulgence in food and its ever-varying and luxurious quality which cause a very great number of diseases.

The hyperingestion of food material causes at first increased cellular activity, which is soon followed by inaction. The process of metabolism becomes impaired; effete matter remains in the tissues and causes a more or less pronounced auto-intoxication. An eventual excess of carbon dioxide in the blood and the other tissues may have been thus produced.

The dietetic treatment of the incipient stage of diabetes, as I prescribe it for my patients, does not consist in the complete exclusion of one or the other food stuff, but in ordering a diminished supply of all of them. I let a patient partake of anything he likes (with the exception of alcoholics, and especially malted beverages) in limited quantities and at stated hours.

The limited supply of ingesta and the regularity in taking the meals, in my opinion, is the best dietetic treatment in the prodromal stadium of diabetes.

Milk and milk products, among the latter principally the unadulterated American store cheese, are valuable food stuffs in the preglycosuric stage. I recommended genuine American cheese to every one of my thirty-two patients, and, although some at the onset could only partake of very small quantities thereof, they invariably succeeded in cultivating a taste for it in time.

The medicinal treatment of the first stage of diabetes mellitus is very essential. I have tried a variety of remedies with more or less success; arsenic or arsenic and gold are undoubtedly the peers of all other remedial agencies in that condition. True, arsenic, in the healthy organism, especially if taken in full physiological doses, retards or diminishes the elimination of carbonic acid. In the prodromic stage of diabetes, however, when chemical and functional changes and deficiencies are already occurring, its *modus operandi* must be a different one; it modifies the nutritive and metabolic processes of the deteriorating system, and may thus prevent the occurrence of glycosuria, or may modify the latter's course.

The non-official solution of the bromide of arsenic, which produced excellent results in the treatment of diabetes mellitus in Clemens's cases, was the form of arsenic which I used formerly.* Barclay, of Pittsburgh, some years since devised a liquor composed of the bromides of arsenic and gold, which has so many advantages over the extemporaneously prepared arsenic bromide solution that I have employed it almost exclusively in the treatment of all my cases of preglycosuric diabetes.

Gold has been made use of as a therapeutic agent from time to time in the treatment of diabetes. Dr. J. A. Robinson reports two cases of this affection in which the chloride of gold and sodium produced a steady decrease and consequent disappearance of glycosuria.

Bromide of gold in combination with bromide of arsenic, as in Barclay's solution, which latter is known to the physician as arsenauro, is certainly a powerful metabolic stimulant in the early treatment of diabetes. I am in the habit of starting a patient with five drops of this liquor, in plain or Vichy water, twice or three times daily, and gradually increasing the dose until full physiological effects are produced. A patient of mine afflicted with incipient diabetes takes at this present day fifty drops of the liquor three times daily. I discontinue the administration of the liquor as soon as the indications of a physiological saturation become evident, but one or two weeks later I let the patient start in again as before. In this manner I am enabled to keep up the alterative influence for any length of time without producing aurism and arsenicism. To the powerful action of arsenic and gold, which in the form of arsenauro can be steadily and safely administered, I ascribe the non-appearance or the disappearance of glycosuria in a number of my cases cited above; arsenic and gold, in this combination, seem to act as modifiers and improvers of the disturbed metabolic equilibrium of the prodromic stage of diabetes mellitus.

Diabetic deterioration, when recognized in its prodromal stage, I conclude, can be often retarded or completely arrested if proper hygienic, dietetic, and medicinal treatment is early instituted.

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* Clemens's solution of the bromide of arsenic, according to Shoemaker (*Materia Medica and Therapeutics*), is made by boiling powdered arsenious acid and potassium carbonate (of each fifty-seven and a half grains) in eight fluid ounces of distilled water, and the resulting solution cooled and increased by the addition of more distilled water (up to eleven and a half ounces), to which is added pure bromine (one hundred and fifteen grains). The fluid is kept four weeks, being frequently shaken during the first week, or until it forms a permanently clear solution.

ON THE TREATMENT OF
GASTRIC ULCERS AFTER HÆMORRHAGE.

By CHARLES O'DONOVAN, M. D.,
BALTIMORE.

A GREAT many gastric ulcers exist for months or years, causing more or less inconvenience to the unfortunate individuals in whose stomachs they are, but never producing even a single hæmorrhage, their existence never suspected perhaps, or discovered only at the autopsy, after death from some other cause. Some may produce a single hæmorrhage, thus compelling a careful examination into the obstinate dyspepsia, which had been treated carelessly or perhaps not at all, with a positive diagnosis leading to proper treatment, after which the ulcer may improve and become completely obliterated by cicatrization, or the first hæmorrhage may prove to be a fatal one. Some, by deep erosive action, may penetrate entirely through the wall of the stomach and produce death by septic peritonitis, or cause adhesion of the stomach to adjacent organs after a localized peritonitis with agglutination. Others give rise to successive hæmorrhages leading to long periods of suffering and anxiety, to end after all, in many instances, in death from hæmorrhage. It must be obvious at once that these different classes require different treatment, not at all because there is any peculiarity in the form or causation of the ulcers themselves, but because of the diversity of results happening rather on account of the accidental situation of the ulcer than for any other cause. When called to see a case of profuse hæmorrhage—and these cases often do present very profuse bleeding—the physician is required to exercise great discrimination; the friends of the sufferer insist upon something being done, and are not usually satisfied with the course of treatment accepted as most judicious in such an emergency. One must remember how necessary rest is in such cases, and how easily the coagula may be forced from the gaping mouths of ulcerated arteries or veins by mere changes in the position of the patient. This, then, is the first requisite: let the patient be put to bed, with the head low, and all tight or constricting clothes be removed at once; even the covers should be of the lightest, so that there shall be no interference with the proper flow of blood through its normal channels. A small hypodermic injection of morphine should be given at once to quiet the restless anxiety of the patient, who will naturally be excited by the sight of so much blood in the vomit, and who can best be pacified in this way. In many cases this will be all that will be required; the case has declared itself, and upon careful attention to diet it gets well under Nature's care. And diet is most important. For the first twenty-four hours the stomach should have absolute rest, nothing being given beyond a little cracked ice, swallowed whole in pieces as large as a chestnut, and just enough water to satisfy the thirst. After twenty-four hours a little milk may be given, as the least irritating and easiest digested food, beginning with a teaspoonful at a time and increasing up to a fair allowance, and this should be all. If vomiting persists, even milk often can not be given, and then we must have recourse to rectal alimentation, giving the stomach absolute rest for several days, when the milk can be tried. If it agrees with the patient, let him have nothing else for a month or longer, and the ulcer may disappear entirely.

Thus, on February 23, 1894, E. M., a white servant girl, about thirty-five years old, came to my office looking very white and ill, with a history of having a few hours before vomited over a quart of blood. She had fainted from weakness, and upon recovery, after resting a short while, came to me. She had been ailing for some time with markedly dyspeptic symptoms, but seemed fairly well nourished and well developed. I ordered her home at once and to bed, to remain perfectly quiet, and take nothing but a little crushed ice. She improved at once. The rest was exactly what she needed. The next day she passed large quantities of digested blood from her bowels, but vomited no more. In two days she began to take milk, and lived on it absolutely for five weeks, spending most of that time in bed. She behaved very well and showed much patience. She never had any more vomiting, and grew stouter and better from the beginning. She appeared to be perfectly well at the end of eight weeks and was allowed to go back to her work and eat other food with certain restrictions and caution. I saw her again after a year, on March 5, 1895, and she had been perfectly well ever since.

But all cases, even of single hæmorrhage, are not so simple in their results.

I recall the case of a woman whom I saw first on January 4, 1894. She was fifty-six years old and had been gradually running down, noticeably during the preceding months, at a time when she was very much occupied, both mentally and physically. About an hour before I saw her she had, without any warning whatever, vomited nearly half a gallon of what was, practically, pure blood. She was at once put to bed and fed with pieces of cracked ice; ergotole was given under the skin, and I watched her all night. She was completely prostrated, almost pulseless, and excessively frightened. At 2 A. M. she vomited some more bloody water and mucus, but not very much. She rallied very slowly. She never had another hæmorrhage, but so shocked and shaken was her nervous system that for months she was hysterically anxious and apprehensive about herself, and the least sign of nausea would completely unnerve her. She was watched very carefully; was kept on an absolute milk diet for six weeks, with large doses of bismuth subnitrate; after this she was sparingly allowed light broths and trifling additions to her diet. But her treatment was necessarily as much for her mind as for her stomach; she became despondent and hypochondriacal; constantly watched her pulse, and would fear to sleep, although complaining of her lack of sleep. Anodynes and hypnotics were withheld because of a previous experience with her, when I had great difficulty in inducing her to give up taking opium pills that another physician had unwisely given her for restless nights. Though she had no more hæmorrhages, she became so emaciated, through fear of taking food, that she weighed but eighty-three pounds, and only after six or eight months did she begin to improve. When she was very depressed and melancholy, complaining constantly of pain in her stomach and looking hourly for another hæmorrhage, in the third or fourth week of her illness, I gave her a great deal of relief, at least mentally, by putting a blister, from strong nitric acid on cardboard about an inch and a half in diameter, just over the pit of the stomach, where she complained of most pain. This was kept active for weeks by covering it with sticking plaster frequently renewed.

If one may expect this much trouble and anxiety after cases of but one hæmorrhage, what shall I say of those cases of repeated hæmorrhages at longer or shorter intervals, cases in which the ulcer, under appropriate diet and treatment, seems to heal kindly for a time, till some imprudence of diet following overconfidence, or some unassignable cause, produces once more the flow of blood? These are very troublesome cases. Frequently there has been more or less bleeding for several days before the large hæmorrhage with vomiting occurs; the smaller amounts passing off by the bowels and producing no effect, apparently, except the rapid emaciation and blanching of the sufferer; then comes the hæmatemesis and the doctor sees the case for the first time.

I have seen an example of this in an unmarried Irish girl, aged twenty-five years, who had been in America a year and a half when she had her hæmorrhage on May 12, 1895. When she arrived from Ireland she was fat and hearty, but the climate here did not suit her and she grew regularly thinner and more anæmic. She had lately been complaining of dyspeptic symptoms, for which she was taking medicine, and for several days she had been passing stools that were very thick and black, like tar, and which were probably partially digested blood. On May 11th she vomited some very dark blood, but paid little attention to it, as it only weakened her a little, adding somewhat to a weakness to which she had grown accustomed. The next day, however, she vomited half a basinful of blood, and was so extremely prostrated when I saw her that she readily gave up and went to bed. She was ordered ergotole in thirty-drop doses every three hours, and cracked ice if nausea became severe, but absolute rest above all. The next day she was very comfortable until evening, when she complained of a sense of weight in her stomach, and at 9 P. M. she vomited a pint of pure blood, after which she was terribly prostrated; her pulse went up to 150, and I feared that she was bleeding internally an indefinite quantity. She was fed cracked ice, and kept very quiet. She had no vomiting during the next day, but she was very white and pinched, and her pulse was so thin and bad that I ordered stimulating enemata, giving the stomach all the rest I could. She passed a fair night, and was fairly comfortable the next day (15th) until, against all orders, she insisted upon getting up to have her bed made; this brought on another hæmorrhage, and she vomited half a pint of blood and became collapsed. When I saw her after this she looked like death, she was nearly pulseless, her extremities were cold, and every sign was bad. She was ordered stronger enemata, and forbidden to take anything by the mouth beyond a few drops of water to moisten the tongue. Her bowels were thoroughly washed out, the stools containing quantities of blood, and all food was given by the rectum. She began to improve slowly. On the 18th she vomited, but no blood, and that afternoon she was allowed milk by the mouth, beginning with a teaspoonful at a time. Her improvement was very gradual, but she has never since had any hæmatemesis.

It was very disappointing to see this woman vomit day after day and have no way to be sure whether or not the bleeding was going on during the intervals. After each hæmorrhage one hopes that no more will occur, but with each recurrence such hope grows less. This woman came as close to dying as any one I ever saw escape it; that she did escape I must ascribe to good fortune rather than to any effect of treatment. Neither rest, nor ice, nor abstention from food served to check the bleeding entirely; yet when her life was at its lowest ebb the hæmorrhage ceased spontaneously. I realize, and realized then, that it might have returned once more and resulted fatally. Is one justified in standing by in such a case with folded hands and awaiting the end in uncertainty? Does not modern surgery still offer a hope after medicinal means have proved ineffectual? Or should we wait that long? How far can we safely go in such dilatory treatment? I feel that there is a point in these cases where the surgeon should interfere. I recognize the fact that the large majority of the patients get well with careful diet and attention to the proper details of treatment, but some cases do not end so fortunately, and these patients we must try to save by laparotomy. This treatment I believe to be particularly applicable to cases presenting profuse hæmorrhage after periods of apparent cure, occurring in chlorotic or otherwise unhealthy individuals in whom the ulcer persists or perhaps grows larger in spite of the cessation of hæmorrhage until some strain, or excess, or extension of the erosion gives rise to another bleeding. The patient may be unable or unwilling to conform to the necessary regimen of rest and diet for the time required for a reasonable assumption of cure, and so after an indefinite time, more or less long, the whole train of symptoms recurs, leaving the individual in a worse plight than after the previous hæmorrhage. Unless everything is subordinated to the prescribed course of treatment, and this is patiently and faithfully observed for a long time, certainly for weeks, perhaps months, recurrence may be almost surely looked for. Under such circumstances the ulcer will not heal. The blood must be raised to a higher standard, the general tone of the system must be improved, before the process of repair can go on.

In January, 1888, I saw a man, aged twenty-seven years, of Irish parentage, who had always been healthy, but who had lately been growing more and more sallow; he was a stonecutter, and his failing health had been accredited to probable lung trouble as the result of his dusty work. He had been drinking a little the night before I saw him, chiefly beer, and in the morning, while on his way to work, was taken with profuse hæmatemesis. He was brought home and put to bed, where he had one or two more small hæmorrhages during the day, and several large, tarlike stools within twenty-four hours. He took nothing but some cracked ice, and recovered nicely from that attack, except that he was left very chlorotic, his face being more than sallow—rather greenish. He had no lung trouble. He was put on iron in full doses, and his condition explained to him, yet he would get about too soon in spite of everything. In March he had another hæmorrhage, coming on just like the first, after overdistending his stomach by drinking freely of beer. This recurrence made him more cautious; he rested longer and made apparently a complete recovery, but he remained extremely chlorotic, in spite of iron given in various forms and different combinations. He had no more bleeding till December, nine months having elapsed. This was not a very severe attack, but in February, 1889, he had a hæmorrhage that nearly finished him. From this he recovered very slowly, but by this time he had become so accustomed to them that he would take no care, and returned to his work long before it was allowable. His next recurrence was in August, and he had just begun to be fairly well again when, in November, he had a succession of bleedings which lasted through several days till he died on November 26th.

Were this man alive to-day, I should unhesitatingly advise him to undergo an exploratory incision, with promise of a radical cure if the ulcer should be found in a location suitable for operation. I believe that in such recurring cases, where anything interferes with the proper treatment over a sufficient time for complete healing of the ulcer, we can save our patients only by surgical procedure. The condition seems very similar to that which exists in recurring appendicitis, and calls as strongly for interference. The operation may be somewhat more difficult and more dangerous, but I feel that the almost certain recurrence and consequent danger to life, growing each time more pronounced, make the operation not only justifiable, but imperatively demanded. As for the danger, let the operation be but recognized and gain some vogue and the technique will rapidly develop and the danger diminish. This may safely be left to the surgeon. It is, I think, the part of the physician to recognize that recurrent hæmorrhages from gastric ulcer call for surgical advice, at least, and often for active surgical treatment, and that lives may be saved in this way that would surely be sacrificed, sooner or later, by adhering to the customary course of ineffectual medical treatment.

10 East Read Street.

Therapeutical Notes.

Swabbing the Nose with Cocaine as a Remedy for Neuralgic Dysmenorrhœa.—Dr. W. Fliess, of Berlin (cited in the *Gazette de gynécologie* for June 1st), has observed a physiological connection between menstruation and certain parts of the nasal mucous membrane, such as that of the inferior turbinated bone and that covering a portion of the sæptum, rich in vessels and in glands, that some authors have called the tuberculum sæpti. During menstruation, he says, these parts swell, become cyanotic, are very sensitive, and are often the source of hæmorrhages. The application of a twenty-per-cent. solution of cocaine hydrochloride to these parts causes the rapid subsidence of menstrual pain, provided it is not due to a mechanical cause, such as stenosis of the cervix uteri.

Crayons of Chloral and Menthol.—The *Journal de médecine de Paris* for June 6th gives the following formula:

℞	Chloral hydrate, Menthol,	each 1 part;
	Cacao butter	2 parts;
	Spermaceti	4 "

Melt the cacao butter and the spermaceti together, add the chloral and menthol, and pour the whole into a mold.

Quinoline in the Treatment of Whooping-cough.—G. Koch, according to a summary of an article by Marius Martin (*Gazette hebdomadaire de médecine et de chirurgie*, June 17, 1897), prescribes quinoline in whooping-cough, to be taken internally in daily amounts of from four to fifteen grains, according to the patient's age and the severity of the disease. He gives the following formula:

℞	Quinoline tartrate	1 part;
	Distilled water, Syrup,	each 75 parts.

M. S.: A tablespoonful every three hours.

A Mixture for Whooping-cough.—Guaita (*Semaine médicale; Progrès médical*) gives the following formula:

℞	Phenocoll hydrochloride, Antipyrine,	each 7½ grains;
	Potassium bromide	6 "
	Syrup of bitter orange peel, Orange-flower water,	each 380 "

M. A child eight years old may take the whole amount, in four doses, in the course of twenty-four hours.

Antiseptic Lubricants for the Catheter.—Guiard (*Annales des maladies des organes génito-urinaires*, June, 1897) recommends the following formulæ:

1.	℞	Carbolic acid	1 part;
		Sterilized oil of sweet almonds	25 parts.

M.

2.	℞	Porphyrized boric acid	1 part;
		Sterilized white vaseline	6 parts.
3.	℞	Sterilized powdered soap, Sterilized glycerin, Sterilized water,	each 11 parts;
		Resorcin, beta-naphthol, or absolute phenol	1 part.

M. This is Guyon's soluble ointment. It has the advantage of being readily removed by washing.

Creoso-magnesol is said to be a preparation containing eighty-nine per cent. of creosote in which the taste of that substance is masked, and to be well borne by the stomach. Romeyer and Testevin (cited in the *Progrès médical*) recommend it in the treatment of pulmonary tuberculosis, the following formula being followed:

℞	Creoso-magnesol	150 grains;
	Honey	a sufficiency.

M. Divide into a hundred pills. From six to ten pills to be taken daily.

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AN EXPLANATION OF THE ACTION OF IRIDECTOMY IN GLAUCOMA.

IN the *Progrès médical* for May 29th there is a remarkable article, by Dr. Abadie, on the nature of glaucoma and on the way in which iridectomy proves beneficial in that disease. The author begins with the remark that permanent pathological changes must give rise to continuous and not to transitory symptoms; hence a glaucoma, acute or subacute, that manifests itself by crises can not be due to a permanent change in the sclero-corneal region, or to effacement of the irido-corneal angle, or to structural alteration of Fontana's space. Transitory disturbances, he adds, are necessarily due to the agency of the nervous system. The theory of the nervous origin of glaucoma has been maintained before, but always with a preponderating influence ascribed to the fifth pair. Recent discoveries, however, show that the trigeminal is purely a sensory nerve charged exclusively with conveying peripheral impressions to the centres. The trophic influence over the eye attributed to it must therefore be ascribed to the fibres of the sympathetic which accompany it and take part in the formation of the ciliary nerves.

On the strength of these facts Dr. Abadie undertakes to show that glaucoma depends on irritation of the vaso-dilator nerves of the eye—a temporary irritation in the form marked by crises, and a lasting one in the chronic variety. The increased tension results from exaggerated repletion of the blood-vessels and perhaps also from a supersecretion of intra-ocular fluids dependent thereon.

The author refers to François Franck's statement that the vaso-dilator nerves of the eye have the same medullary origin and follow the same course as the dilator nerves of the pupil, and he adds that therefore it is not astonishing that the pupil should always be dilated in glaucoma, since irritation of the one set of nerves is accompanied by irritation of the other set. But the most striking proof that glaucoma is really occasioned by dilatation of the blood-vessels of the eye, he says, is furnished by the action of mydriatics and meiotics. Atropine, for example, always aggravates the glaucomatous crises, even if it does not occasion them, while eserine mitigates them.

In cases of acute or subacute glaucoma iridectomy acts surely, and it is of service in all forms in which the functional troubles are intermittent. The following are M. Abadie's ideas of the way in which it acts: Under normal conditions the nervous currents which regulate the reciprocal relations of vascular dilatation and constriction pass through the nervous plexus situated in the median zone of the iris, in which terminate a certain number of ciliary filaments. When the vaso-dilator current is in the ascendant it reaches this plexus without interruption, and dilatation of the vessels of the eye is the consequence. But, if the plexus has been cut, the excessive action of the dilator current ceases and order is restored. In iridectomy, then, it is not the mere excision of a bit of the iris that is effective, but the excision of a portion of the nervous plexus that it contains.

M. Abadie goes on to say that it is easy to demonstrate the truth of this explanation. If, he says, in a case of acute glaucoma, simply the pupillary sphincter or the ciliary periphery is subjected to the excision, the median zone containing the circular plexus being left intact, the operation is of no use. If, however, the excision is so done as to involve only the median zone it is as effective as complete excision. It is of little consequence whether the piece of iris removed is wide or narrow, provided it includes the whole breadth of the iris; indeed, simple section without any excision would suffice.

INFLUENZA FROM THE GYNÆCOLOGICAL POINT OF VIEW.

DR. MÜLLER, of Markdorf (Graefe's *Sammlung zwangloser Abhandlungen*, i, 8; *Centralblatt für Gynäkologie*, June 19, 1897), has recorded some interesting observations concerning the effects of influenza on the reproductive apparatus in women. It appears that a large percentage of the women who are attacked with influenza are affected with pelvic manifestations. Prominent among them is uterine hæmorrhage, which for the most part is accompanied by severe abdominal pains and is not controlled to any noteworthy extent by the usual treatment. Hæmorrhages occur even in cases of amenorrhœa. Women who already have some pelvic trouble generally suffer an exacerbation of the preexisting disease, whereby the results of previous treatment are brought to naught and the patient is greatly weakened. Insignificant chronic inflammations, such as those of the parametrium, are rendered severe again by the influenza, in some cases to the extent of being accompanied by a fresh formation of exudate; and pelvic peritonitis shows a tendency to become diffuse. Cases of metritis and endometritis are generally affected unfavorably, and even tumors grow with suddenly increased rapidity. Moreover, disturbances of the bladder are not infrequently set up.

Still more remarkable are the effects of influenza on pregnant women. Abortion occurs in an exceedingly large proportion of the cases, accompanied by excessive hæmorrhage. In labor, influenza patients often show mental depression and apathy alternating with conditions of great excitement, and the uterine contractions are uncommonly painful. The lochia remain bloody for weeks and often offensive, and lactation seems to be restricted.

The author finds an explanation of these baleful effects of influenza in the fact that the disease occasions a general hyperæmia of the organs in consequence of which hæmorrhagic endometritis, for example, is set up. The occurrence of acute inflammations he interprets in two different ways—either the inflammation of the uterine mucous membrane and that of the parametric connective tissue are occasioned by the cause of the influenza directly, or the parametritis is the result of secondary infection proceeding from the inflammatory affection of the endometrium. In addition, the metabolic products of the influenza bacilli have, of course, a general injurious influence.

MINOR PARAGRAPHS.

KUBISAGARI, A DISEASE ENDEMIC IN JAPAN.

In a publication consisting of contributions from the Medical Faculty of the Imperial Japanese University in Tokyo (*Centralblatt für innere Medicin*, June 12, 1897), Dr. K. Miura writes of a disease that prevails endemically in the northern provinces of Japan. The name *Kubisagari*, it seems, signifies one who lets his head hang down. The disease is known in European literature as paralytic vertigo (*vertige paralysant*), vertigo with ptosis (*vertige ptosique*), and Gerlier's disease. It is characterized by attacks, lasting from a few minutes to several hours and occurring with varied frequency, of dimness of the eyes, ptosis, paresis of the muscles of the neck, so that the head droops, and paresis of the muscles of the limbs and trunk, of the tongue, and more rarely of the muscles of the lips and of those concerned in mastication and deglutition. Less common symptoms are ill humor, increase of the nasal, the lacrymal, and perhaps also the salivary secretion, and exaggeration of the tendon reflexes. These attacks are brought on by bodily exertion, especially in a stooping posture with the stomach empty, straining of the eyes, and scanty food or that which is difficult of digestion. In the intervals the patient may be free from the symptoms or there may be slight ptosis, great weakness of the muscles of the neck, and heightened tendon reflexes. The disease may last for many years, but it is never fatal. It is most prevalent in the warm season, from May to October, and attacks by preference persons who have the care of great herds of horses and cattle and sleep under the same roof with the animals, so that they are exposed to the emanations from the stalls. It is to this that Miura attributes the disease, which he considers to be identical with that described by Gerlier, in 1886, as occurring in French Switzerland, especially in the Canton of Geneva. In Gerlier's cases, too, the ætiology seems to have been the same.

THE *NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.*

This excellent journal, having completed the fiftieth year of its useful and creditable career, appropriately refers to its efforts in the past and expresses its purpose of adhering in the future to the policy that has brought it honor and prosperity. We heartily congratulate our contemporary and wish it continued success.

"THERMOPALPATION."

Herz and Hichl (*Wiener medicinische Presse*, 1897, Nos. 7 and 8; *Centralblatt für innere Medicin*, June 19, 1897) have been investigating the conditions on which Benczur and Jonas have sought to found a new form of physical examination, "thermopalpation," in which the temperature of a part is thought to be lowered if it overlies a solid structure. Their observations have been very limited and hardly admit of any trustworthy inference, but they promise to continue them.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 6, 1897:

DISEASES.	Week ending June 29.		Week ending July 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	3	12	3
Scarlet fever	186	12	126	9
Cerebro-spinal meningitis	0	0	0	0
Measles	248	7	160	4
Diphtheria	263	31	232	22
Croup	9	2	13	0
Tuberculosis	177	100	145	98

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general during the week ending July 3, 1897:

Small-pox—United States.

Memphis, Tenn	June 19–26	3 cases.	
Brooklyn, N. Y	June 19–26	1 case,	1 death.
Cambridge, Mass	June 19–26		1 "
Chicago, Ill	May 1–31		1 "

Small-pox—Foreign.

Bombay, India	May 25–June 1		3 deaths.
Calcutta, India	May 8–15		8 "
Gibraltar	June 6–13	1 case,	1 death.
Hong Kong, China	April 24–May 22		23 deaths.
Madras, India	May 15–28		6 "
Madrid, Spain	May 26–June 9		5 "
Nagasaki, Japan	May 26–June 2	7 cases,	3 "
Odessa, Russia	June 5–12	4 "	2 "
Osaka and Hiogo, Japan	May 29–June 5	2 "	
Matanzas, Cuba	June 9–16		1 death.
Sagua la Grande, Cuba	June 12–19	45 "	2 deaths.
Trieste, Austria	May 22–29		1 death.
Habana, Cuba	June 17–24		3 deaths.
Chihuahua, Mexico	June 22	Small-pox reported.	
Ceara, Brazil	May 1–31		2 "
London, England	June 5–12		1 death.
Glasgow, Scotland	June 5–12		1 "

Cholera.			
Bombay, India	May 25–June 1		15 deaths.
Calcutta, India	May 8–15		59 "
Yellow Fever.			
Cardenas, Cuba	June 12–19	8 cases,	2 deaths.
Para, Brazil	May 29–June 12		4 "
Matanzas, Cuba	June 9–16		4 "
Sagua la Grande, Cuba	June 12–19	30 "	
Santiago de Cuba	June 5–19		17 "
Habana, Cuba	June 17–24		48 "
Plague.			
Bombay, India	May 25–June 1		34 deaths.

The Late Surgeon Hutton, of the Marine-Hospital Service.—The supervising surgeon general has issued the following circular letter, dated June 29th, announcing the death of Surgeon Hutton:

" *To the Medical Officers of the U. S. Marine-Hospital Service:*

"It is with regret I have to announce to the medical officers of the service the death, on the 14th of this month, after a lingering illness, of Surgeon William Henry Harrison Hutton.

" Surgeon Hutton was born in York, Jefferson County, Ohio, February 28, 1838. At the beginning of the late civil war he enlisted in Company K, 20th Regiment, Illinois Volunteers. After about a year's service with his regiment he was discharged and re-enlisted in Company D, 104th Illinois Volunteers, in which regiment he served until the spring of 1864, when, in consequence of a wound received at Pittsburg Landing, he was sent to Chicago, Ill., and in a few months recovered sufficiently to be placed in charge of the office of the Desmanes Eye and Ear Hospital under the U. S. Army, where he remained until March 7, 1865, when he was mustered out of the volunteer service. By his bravery he won promotion at the battles of Chickamauga and Missionary Ridge.

" He attended his first course of medical lectures at the Alabama Medical College, at Mobile, and on March 16, 1875, was graduated from the Chicago Medical College, Chicago, Ill., receiving from this institution the first prize of the faculty for the best graduating thesis.

"He was appointed assistant surgeon in the Marine-Hospital Service, May 8, 1875, and was promoted to the grade of surgeon, October 20, 1876. Surgeon Hutton during his connection with the Marine-Hospital Service served as commanding officer at the following stations: New York, Cincinnati, New Orleans, Detroit, Louisville, Mobile, and Baltimore.

"In addition to the above-mentioned duties, he rendered valuable service at Brunswick and Way Cross, Ga., and Camp Perry, Florida, in 1888, in enforcing the quarantine and other measures during the yellow-fever epidemic of that year, and again at Brunswick, Ga., during the yellow-fever epidemic in 1893. At Camp Perry he installed and was in command of the first detention camp, which proved so successful in the management of the epidemic at that time raging in Jacksonville.

" He was also placed in charge of the quarantine establishment at Sandy Hook, N. J., during the cholera scare in 1892, and later, in the same year, rendered efficient services in the establishment of the quarantine flotilla at Cape Charles. In 1894 he was detailed to inspect the quarantine stations along the Florida coast, and had temporary charge of the Gulf Quarantine during a part of the same year. For thirty-five years Surgeon Hutton has been serving his country in various capacities in war and pestilence, and always with a conscientious devotion to its interests and with a zeal worthy of emulation. He was ever ready to obey a summons to duty, and oftentimes was a volunteer when epidemics threatened the country.

" In his death the service loses one of its oldest and most efficient officers. Respectfully yours,

" Walter Wyman,

" *Supervising Surgeon General, M.-H. S.*"

The Mississippi Valley Medical Association.—The next meeting will be held in Louisville on October 5, 6, 7, and 8, 1897. All railroads will offer reduced rates. The president, Dr. Thomas Hunt Stucky, and the chairman of the committee of arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the association, and this promise is warranted by the well-known hospitality of Louisville and Kentucky doctors. Titles of papers should be sent to the secretary, Dr. H. W. Loeb, No. 3559 Olive Street, St. Louis.

The Medical Society of the County of Broome, N. Y., held its quarterly meeting in Binghamton on Tuesday, July 6th, under the presidency of Dr. B. E. Radeker. Patients were to be shown by Dr. T. A. Hix and Dr. D. S. Burr; Dr. J. H. Chittenden was to present a report of the committee on epidemics; Dr. W. N. Wilson was to present that of the committee on materia medica and therapeutics; Dr. William A. White was to read a paper entitled Some Studies of Hypnosis and the Phenomena of Consciousness in a Case of Hysteria; and Dr. E. L. Smith was to read A Report of a Curious Case of Septicæmia.

The Tri-State Medical Association of Western Maryland, Western Pennsylvania, and West Virginia will meet in Bedford, Pennsylvania, on Tuesday, July 15, under the presidency of Dr. E. T. Duke. The programme has the following titles: A Series of Brief Clinical Histories of Some of the Rarer Forms of Ocular Traumatism, by Dr. Charles A. Oliver, of Philadelphia; Sedimentation in Urinary Analysis, by Dr. William B. Canfield, of Baltimore; Typhoid Fever, by Dr. C. F. Doyle, of Cumberland Valley; Some of the Digestive Disorders caused by Nasopharyngeal Catarrh, by Dr. W. H. Daly, of Pittsburgh; Auto-intoxication, by Dr. C. C. Jacobs, of Frostburg; Nutrition, by Dr. William F. Barclay, of Pittsburgh; Obstinate Cases of Stomach Troubles Treated by a New Method, by Dr. A. Enfield, of Bedford; and The Treatment of Some Cases of Cancer of the Cervix Uteri, by Dr. William J. Craigen, of Cumberland

The Moscow Congress.—" A letter received from the secretary general of the Twelfth International Medical Congress conveys the following information, which is additional to that which has been published in the medical nournals:

" As it is too late to send tickets to the American congressists, they are requested to send to the secretary general at Moscow their addresses in London, or Berlin, or Vienna, or Paris, or to avail themselves of the national committees in those cities in order to receive their tickets and free passes over Russian railroads in those places.

" The free passes are valid from July 13th to September 13th over the following routes: Eydtkunen–Moscow and back: Moscow–Petersburg, or Moscow–Graniza, or Moscow–Odessa, or *vice versa.*

" Graniza–Warsaw–Moscow and return by Moscow–Petersburg (or Odessa, or Eydtkunen, or Unghem, or Alexandrowo), or *vice versa.* Different lines going and returning may be chosen, and stop-over is permitted. Eydtkunen–Petersburg is excluded from the free list."

[Signed.] A. Jacobi, *Chairman Amer. Nat. Com.*

The Late Dr. J. Lewis Smith.—The faculty of the Bellevue Hospital Medical College have made this minute: " It is with sorrow that we record in the minutes of the faculty of the Bellevue Hospital Medical College the death, on June 9, 1897, of Dr. J. Lewis Smith, late clinical professor of diseases of children. Dr. Smith was a teacher in the college for thirty years. He brought to his instruction a ripe experience and sound judgment, and had attained a most enviable reputation, not only as a public teacher, but as a voluminous writer on the subjects of his special studies. His loss will be deeply felt, not only by the profession, but by the public at large, who benefited so much by his skill and devotion." [Signed.] Austin Flint, *Secretary.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 27 to July 3, 1897:*

Gandy, Charles M., Captain and Assistant Surgeon, now on duty at Washington Barracks, D. C., will report in person on July 1, 1897, to the Governor of the Soldiers'

Home, near Washington, D. C., for temporary duty during the absence on leave of FORWOOD, WILLIAM H., Colonel and Assistant Surgeon General, and, upon the return of that officer, will rejoin his proper station.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending July 3, 1897:*

LEYS, J. F., Assistant Surgeon. Detached from the Vermont, July 6th, and ordered to the Helena, July 7th.

RIGGS, C. E., Assistant Surgeon. Ordered to the Vermont, July 6th.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending June 26, 1897:*

GLENNAN, A. H., Passed Assistant Surgeon. To inspect quarantine stations on the west coast of Florida. June 22, 1897.

CARRINGTON, P. M., Passed Assistant Surgeon. To assume temporary command of service at St. Louis, Mo. June 24, 1897.

KINYOUN, J. J., Passed Assistant Surgeon. To proceed to New York and inspect schooner Fox. June 21, 1897. To proceed to Nashville, Tenn., for special duty. June 25, 1897.

STONER, J. B., Passed Assistant Surgeon. To inspect quarantine stations on the east coast of Florida. June 24, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. On completion of duties at Moscow, Russia, to rejoin station, Washington, D. C. June 25, 1897.

PROCHAZKA, EMIL. Granted leave of absence for seven days. June 23, 1897.

Births, Marriages, and Deaths.

Married.

DUNCAN—COIN.—In Birmingham, Alabama, on Wednesday, June 23d, Dr. J. J. Duncan and Miss Theresa C. Coin.

EADIE—WHELAN.—In Batavia, N. Y., on Wednesday, June 30th, Dr. A. B. Eadie, of Buffalo, and Miss Emma Trevor Whelan.

MOORE—PEARSE.—In East Providence Centre, Rhode Island, on Tuesday, June 29th, Dr. Elmer Elsworth Moore and Miss Annie Richmond Pearse.

Died.

DUVAL.—In Laurens, South Carolina, on Saturday, June 26th, Dr. G. W. Duval.

READ.—In New York, on Sunday, July 4th, Dr. Ira Beman Read, in the fifty-sixth year of his age.

TITTERINGTON.—In Las Vegas, New Mexico, on Sunday, June 27th, Dr. James H. Titterington, aged thirty-three years.

WEY.—In Elmira, N. Y., on Wednesday, June 30th, Dr. William C. Wey, in the sixty-eighth year of his age.

Letters to the Editor.

ON THE PROMPT ACTION OF VALERIANIC ETHER.

NEW YORK, *June 10, 1897.*

To the Editor of the New York Medical Journal:

SIR: While valerianic ether has been known to the medical profession for more than a century, its use has never been truly appreciated by the bulk of physicians. Among a number of cases treated successfully with this drug, the following is typical of several in which prompt results were obtained.

Mr. H. recently returned from Florida, where he had received a severe injury, the result of a tree having fallen on him. About forty-eight hours after his arrival in New York he was taken with convulsions. On the morning of May 19th I was called in by the patient's brother, in the absence of two attending physicians. On reaching the house I found the patient in bed, partially conscious, but suffering violently with convulsions. I administered two capsules of valerianic ether (Vial), and within half an hour he became quiet and somewhat sleepy. Two hours afterward he was given two more capsules, after which he went to sleep and slept for some three or four hours. On awakening he was perfectly conscious, complained of being somewhat hungry, and felt so well that he desired to get out of bed, dress, and go out. Since then he has had no further trouble.

GEORGE W. TOBIAS, M. D.

Book Notices.

Pioneers of Evolution from Thales to Huxley. With an Intermediate Chapter on the Causes of Arrest of the Movement. By EDWARD CLODD, President of the Folklore Society, etc. With Portraits. New York: D. Appleton & Company, 1897. Pp. 274. [Price, $1.50.]

THE theory of evolution is one on which every son of Adam has an opinion. Whether he is willing to acknowledge his simian ancestry or no, he holds to his side of the question with a pertinacity that often bears an inverse ratio to his knowledge of the subject.

For this reason Mr. Clodd's little volume will have an interest by no means confined to the scientific world.

To quote from the preface, the book "attempts to tell the story of the origin of the evolution idea in Ionia, and, after long arrest, of the revival of that idea in modern times."

Part I treats of the early scientific men of Greece and Rome in the six centuries immediately preceding the Christian era. It follows the steps which led later to the development of many of the hypotheses of to-day, and the masterly achievements of these men, which can only be appreciated when one realizes that they had not only to seek the truth, but to fashion their own methods of research. Although still hampered by many fallacies, foremost among which was the belief in the possibility of spontaneous generation, they accomplished much, and it is in their works that we find first mention of germs and of the atomic theory. The chapter is strong, and the outline with which it concludes is valuable as a comparison between the fundamental principles which guided scientific investigation at that time and the laws and hypotheses of to-day.

After so interesting a chapter one is disappointed when the author turns to a discussion of Christianity from the standpoint of one who has no sympathy with its beliefs. The tone of the whole chapter is out of keeping with the rest of the book, and it is with a feeling of relief that we finish it.

In Part III the author shows very concisely the growth of ideas of the laws of organic development and of heredity, with the controversy between their supporters and those who still believed in the fixity of species.

Part IV, dealing with "modern evolution," comprises brief biographies of Charles Darwin, Wallace, Herbert Spencer, and Huxley. It is by far the most readable part of the book. The author shows a knowledge of modern scientific investigation that is remarkable, and yet the chapter is so written that one does not realize how abstruse are the problems with which it deals.

Taken as a whole, the book is strong and interesting. It is printed in clear type on good paper, but we have noticed some typographical errors in the text.

Atlas of Clinical Medicine. By Byrom Bramwell, M. D., F. R. C. P. Edin.; F. R. S. Edin.; Assistant Physician to the Edinburgh Royal Infirmary. Volume III. Part III. Edinburgh: Printed by T. and A. Constable at the University Press, 1897.

The present number completes Dr. Bramwell's great work on clinical medicine. In noticing the preceding volumes as they have appeared from time to time we have had occasion to speak of the high scientific standing of the work and of the author's extraordinary ability as a clinical observer. While we would differ with him upon numerous points, particularly in ætiology and treatment, with the full work now in hand we must say that it does not contain a weak or ill-considered article, and the standard of the first volumes has in no place been lowered. The work gives evidence throughout of the most accurate and painstaking clinical observations and unusual skill in recording them. It is in the highest degree a credit to the author, who must rank as one of the first of modern clinicians. Pathology and ætiology have by no means been neglected. Although the clinical idea has not been lost sight of, nearly every article is a complete and systematic monograph.

The first part of the present volume is devoted to pseudo-hypertrophic paralysis and other forms of progressive muscular dystrophy. Seventeen cases form the basis of the article. Several of these cases terminated fatally, and exhaustive microscopical studies were made of them. The article is, therefore, one of unusual value, as it contains much that is entirely new.

The remainder of the volume is devoted to chlorosis and pernicious anæmia. These articles are particularly worthy of note because of the admirable sections on the diagnosis of the various anæmias.

The plates are fully equal to any that have preceded them. Their number is greater than was originally promised, the fourteen which accompany this volume completing a full hundred.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1896. Part VI. Pp. 139 to 156. [Price, $3 each part.]

Aside from the artistic merit of the illustrations of this atlas, Part VI of it presents no particular feature of note. There are, as usual, four fasciculi, each with its accompanying plate, the beauty of which we rather expect now and are less surprised at with each succeeding number of the work. The first of these fasciculi deals with the lesions in an habitual cocaine and morphine consumer simulating tubercular and ulcerating syphilides. Gaston makes an interesting article, but the case is so unusual as hardly to warrant its having a place in a work which purports to possess the particular feature of representing typical cases of common diseases, rather than rare ones. The same may be said of Sabouraud's article dealing with multiple ringworm of the body, the plate of which represents the unusual appearance of *six* trichophytic lesions over the abdomen—a number seldom attained and still more rarely surpassed. The article is interesting and instructive, though, as all the writer says on this subject usually is.

Jacquet contributes two articles to this number—the one on syphilitic hyperkeratosis, the other on psoriasis. The plate illustrating the first subject pictures well the state of the foot when this accident occurs in syphilitic conditions. The remaining plate is a good illustration of one of the polymorphic lesions of psoriasis—the so-called "psoriasis figurata."

This is M. Jacquet's *début* in this work, and we hope to hear from him later on the subject of the *névrodermite* of the French school—a subject in which both he and Brocq have done some new work which as yet does not seem to have permeated to any extent beyond their own school.

A System of Surgery. By Various Authors. Edited by Frederick Treves, F. R. C. S., Surgeon to and Lecturer on Surgery at the London Hospital, etc. Vol. II. With Two Colored Plates and Four Hundred and Eighty-seven Illustrations. Philadelphia: Lea Brothers & Co., 1896. Pp. xxiv–1120. [Price, $8.]

The first paper in this volume is on injuries and diseases of muscles and tendons, contractions of fasciæ, and affections of bursæ, and is written by Mr. W. Arbuthnot Lane.

Mr. H. H. Clutton is the author of the section on the surgery of deformities, which has been described with considerable brevity and without discussion of the various operations proposed for the amelioration of these conditions. This may be an advantage, but it seems to us that fuller particulars in regard to the technics of the operative measures specified would be appreciated by the student.

Mr. Henry Percy Dean has discussed the surgical treatment of the diseases of the head, including the surgical affections of the scalp, skull, dura mater, and pia mater, abscess and tumors of the brain, malformations of the skull, epilepsy in its surgical aspect, and microcephalic idiocy. The author has been very conservative in his summary in regard to the value of operative interference in epilepsy, as he concludes that many persons with Jacksonian epilepsy have been operated upon, and it has been found in the large majority of cases that, although the attacks of epilepsy ceased for some time after the operation, yet the fits recurred after an interval of longer or shorter duration. He justly believes that for congenital idiocy craniotomy is of no avail, and that few cases of idiocy due to pathological causes are benefited by operative interference.

Mr. William H. Bennett is the author of the sections on fractures, dislocations, and traumatic lesions of the spine and spinal cord and on diseases of the spine. The different affections and the operations essential for their relief have been discussed with thoroughness and due conservatism.

Mr. Herbert W. Page has written the section on concussion of the spine, and he very properly concludes that the conditions that have been described and the influences that are at work in these cases of traumatic neurosis are in no wise peculiar to the effects of railway injury, but may occasionally be seen after any and every form of accident to which man is liable.

The sections on diseases of the ear and of the nose are by Mr. A. Marmaduke Shield, who describes the treatment of such disorders of those regions as are likely to come under the care of the general surgeon.

Mr. Bernard Pitts is the author of the section on injuries and tumors of the neck, the surgical affections of the parotid and thyreoid glands, and those of the larynx. It seems rather singular to one accustomed to the thoroughness of detail which characterizes the more recent American works on surgery to encounter such a passage as the following, which occurs under the treatment of bronchocele: "Reference must be made to a work on operative surgery, as to how best to conduct the operation so as to avoid these dangers" [*i. e.*, hæmorrhage, wound of the recurrent laryngeal, dyspnœa, etc.]. In the scant remarks on intubation, O'Dwyer is incorrectly spelled O'Dyer.

Mr. Pearce Gould has described the surgery of the chest, including the surgical treatment of the thoracic viscera.

Dr. Herbert F. Waterhouse is the author of the section on affections of the lips, mouth, tongue, palate, uvula, tonsils, and pharynx, and he discusses these lesions with considerable detail.

Mr. W. Bruce Clarke reviews the various affections of the œsophagus.

The editor, Mr. Frederick Treves, describes the surgery of the affections of the abdomen and abdominal viscera, including hernia. He is somewhat at variance with American surgeons, though in accord with the majority of physicians, in his comprehensive statement that "the great majority of the cases of perityphlitis call for no operative treatment." We believe we are correct in stating that the McBurney method of operating for hernia has been virtually abandoned and Bassini's method is now most popular in this country.

Dr. Charles B. Ball has written a brief yet satisfactory section on diseases of the rectum.

Mr. W. Watson Cheyne is the author of the section on diseases of the breast.

Mr. Henry Morris describes the injuries and diseases of the kidney, urethra, prostate, bladder, scrotum, testicle, and penis. While this author voices the general opinion that floating kidney is of excessively rare occurrence, his dictum is likely to be criticised by certain men who have found it rather common. With the possibility of Röntgen-ray photographs revealing the sites of viscera, possibly the diagnoses of floating kidney will be more carefully revised. Mr. Morris considers that litholapaxy is now the recognized operation for almost all cases of vesical calculus in males, an opinion that does not conform to the increasing tendency of American surgeons to operate by the suprapubic method and thus avoid all hazard of leaving fragments that will be the nuclei of future calculi.

The final paper in this volume is by Mr. J. Bland Sutton, and treats of those injuries and diseases of the female genital organs that are likely to come under the care of the general surgeon.

While the volume treats of the different subjects in a manner somewhat different from that followed in American text-books, it will be found a very useful and conservative work for the guidance of the surgeon.

Atlas and Essentials of Gynæcology. By Dr. Oscar Schaeffer, Privatdocent in Obstetrics and Gynæcology at the University of Heidelberg. With One Hundred and Seventy-three Colored Plate Illustrations and Fifty-four Woodcuts. New York: William Wood and Company, 1897. Pp. xviii–1 to 288. [Price, $3.50.]

This book is evidently designed as a *multum in parvo.* The larger plates, many of them, are excellent and instructive. The smaller ones in many instances are too small to be studied with advantage by any but a very critical eye. So the book lacks uniformity, the plates are often crowded together, and the effect is satisfactory neither to the skilled nor to the unskilled student. As to the text, it is based almost entirely upon a German foundation, and a work which is offered to an American public should have a larger scope. The rich field of gynæcology, especially the clinical, has been well tilled by workers in many lands. There are numerous handbooks upon this subject which are available to American and English readers that are far preferable, in the writer's opinion, to this one.

Lectures on the Treatment of Fibroid Tumors of the Uterus, Medical, Electrical, and Surgical. By Franklin H. Martin, M. D., Professor of Gynæcology in the Post-graduate Medical School of Chicago, etc. Chicago: The W. T. Keener Co., 1897. Pp. 5 to 174.

The author states that he has had unusual opportunities for the study of this subject. His chapters on anatomy, ætiology, symptoms, and diagnosis present familiar facts in sufficiently attractive form. His advice concerning the medical treatment (*i. e.*, its futility) and the hygienic rules pertaining to this condition is sound and wholesome. His chapter on electricity as applied to fibroid tumors is, as might be expected, an intelligent consideration of the subject. He has wandered, like many others, from his first love for this means of treatment, but he sees a field in which it has usefulness, like all others who have investigated the matter carefully and without prejudice. Such men are safer guides than the extremists on either side. The surgical treatment of fibromata is evidently not unattractive to the author, and the carefulness with which he says he carries out the details of his operations undoubtedly accounts for the excellent results which he has recorded.

Not a little space is devoted to the matter of ligation of the broad ligaments through the vagina. He asserts that both the uterine and ovarian arteries can be thus ligated. In his table of thirteen cases we do not observe that both arteries were thus ligated. He thinks the operation would be useful in cases in which, for any cause, hysterectomy would be impracticable. We may add that it might also have a useful field in advanced cases of carcinoma.

We regret to be obliged to call attention to a number of misspelled words.

Manual of Static Electricity in X-ray and Therapeutic Uses. By S. H. Monell, M. D., Founder and Chief Instructor of the Brooklyn Post-graduate School of Clinical Electro-therapeutics and Röntgen Photography, etc. Illustrated. New York: William Beverly Harison, 1897. Pp. xviii–21 to 614.

Although there have not unnaturally been a considerable number of recent contributions to X-ray literature, the field of static electricity in its therapeutic applications is still but scantily occupied. The portions of this work which treat of X-ray photography will therefore not be amiss, while its discussion of static therapeutics will no doubt be appreciated by those who desire enlightenment upon a subject little taught and, it may be from prejudice, but poorly esteemed. Certainly the reader will find within its covers a large amount of information, which, so far as our knowledge goes, is not elsewhere obtainable save from a multitude of sources. The book is therefore highly valuable to the practitioner.

A Treatise on Cholelithiasis. By B. Naunyn, M. D., Professor of Clinical Medicine in the University of Strassburg. Translated by Archibald E. Garrod, M. A., M. D., F. R. C. P. London: The New Sydenham Society, 1896. Pp. xi–197.

The New Sydenham Society has long held the medical profession under obligation by the publication of a series of works which represent much that is best in medical research and education. Its latest publication, the translation of Naunyn's famous work upon cholelithiasis, is thoroughly in keeping with its purpose, for truly the volume is a worthy companion to its illustrious predecessors.

To enter into a discussion and a criticism of this work would be useless, and we confine ourselves to the mere statement of admiration of a monograph so thorough and so authoritative.

Compressed-air Illness, or So-called Caisson Disease. By E. Hugh Snell, M. D., B. Sc. Lond., Diplomate in Public Health of the University of Cambridge, etc. London: H. K. Lewis, 1897. Pp. viii–251. [Price, 10*s.* 6*d.*]

It would be difficult to imagine a more ably constructed monograph than this work of Dr. Snell's, for, apart from the importance of the subject, the poverty of contributions upon it in the English language, and the extensive clinical opportunities enjoyed by the author for studying the disease, the construction of the work as a literary composition and as a scientific contribution is warmly to be commended.

Beginning with an historical presentation of the uses of compressed air in engineering, and including such observations as have from time to time been made of its injurious effects upon persons exposed to its influence, the work passes to the field of the author's experience. For purposes of clearness chapter second is devoted to a description of the Blackwall tunnel, of which the author was the medical officer, and there is presented an extensive list of illustrative cases there observed. In chapter iv there is a summary of the symptoms caused by compressed air, chapter v is devoted to the matter of prognosis, and chapter vi deals with the diagnosis. These three chapters are brief, as, indeed, they should be, since their subjects do not call for extended treatment.

The question of ætiology is one of vast importance and it is ably discussed in chapter vii. Opinions have differed so widely upon this matter that an authoritative presentation and discussion are welcome indeed. That several factors contributed to the production of the so-called caisson disease has long seemed evident, but the relative importance of them has scarcely been understood, while one factor—namely, the ventilation, or the chemical composition of the compressed atmosphere—would seem hardly to have attracted attention as an ætiological agent at all. That vitiated air is one of the most important causes of the diseased condition produced is strongly maintained by the author, and, taken in connection with the further development of his theory in the chapter upon pathology, the contention, we frankly admit, is strikingly demonstrated.

In chapters ix and x, dealing with the pathology and giving a *résumé* of theories, we find the most interesting part of the book, because of the completeness of its matter and the clear and logical discussion which is applied to the theories as they are presented.

The increased solution of gases by the blood under the influence of the compressed air, with their subsequent more or less violent escape when the pressure is removed, has seemed to many the logical explanation of the condition, but it has remained for the author to call attention to the possibility that carbonic acid is chiefly the gas responsible for the condition, and thus to draw a close connection between poor ventilation and the occurrence of the disease.

The concluding chapter is upon treatment, and is of importance mainly for the stress it lays upon the necessity of perfect ventilation in prophylaxis, and the use of recompression in curing the disease when present.

The reading of this work has given us great pleasure and profit, and we heartily commend it to the consideration of all whom the subject may interest.

A Compendium of Botanic Materia Medica for the Use of Students in Medicine and Pharmacy. With a Glossary. By Samuel Waggaman, M. D., Phar. D., Professor of Botany and Materia Medica, National College of Pharmacy, Washington, D. C. Revised and Corrected Edition. Washington: W. H. Lowdermilk & Co., 1897. Pp. 9 to 504.

We have many times been compelled to comment adversely upon efforts to force the so-called "botanic materia medica" upon the medical student and practitioner, and to point out the useless and even mischievous part which botany plays in the medical education of today. The work now under consideration is yet another evidence of this mistaken zeal and a publication for which the already overburdened medical student can have little use. Naturally its consideration of drugs is based upon a botanical classification, and botany monopolizes the greater part of its descriptions, the portions which deal with physiological activities and therapeutical applications being meagre in the extreme.

Had the author been content to address his words to the student of pharmacy alone, our comments had been only in praise, for there is much about the work which commends it to the student and even the practitioner of pharmacy. Its arrangement is simple and clear, its descriptions are able, and its teaching of botany and chemistry, combined with the brief yet sufficient accounts of medicinal uses, must render it a book of much utility in a pharmaceutical education. The glossary which is appended serves to enhance the value of the book, for it contains a very complete list of words used in materia medica and botany, giving their derivation, pronunciation, and definition as well as a list of the abbreviations commonly employed in prescription-writing. We must take exception, however, to the use of the phrase "*An* addenda" as descriptive of the latter list.

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Primary Cancer of the Nasopharynx Cured by Injections of Alcohol. By Edwin J. Kuh, M. D., of Chicago. [Reprinted from the *Medical Record.*]

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Acquired Nystagmus in Occupations other than Coal Mining. By Simeon Snell, F. R. C. S. Ed. [Reprinted from the *Ophthalmic Society's Transactions.*]

Miscellany.

On the Mechanism by which the First Sound of the Heart is produced.—In an article on this subject in the *Lancet* for June 19th, Sir Richard Quain says, after referring to the doubt existing as to the cause of the first sound, that he thinks it desirable among such differences of opinion to solve if possible a problem which has its special interest and its special importance. Two of the most striking events, he says, which take place during systole—namely, the closure of the auriculo-ventricular valves and the muscular contraction of the ventricular walls—are regarded by many authorities as the sources whence the first sound proceeds. The result of his investigations, on the one hand, have led him to the conclusion that neither of these explanations is satisfactory; and, on the other hand, enables him to indicate what he believes to be the real explanation of the phenomenon.

The Action of the Auriculo-ventricular Valves is not the Source of the First Sound of the Heart.—The mechanism of these valves (the mitral and tricuspid) and their action do not possess the elements necessary for the production of such a sound.

Further evidence on this point may be found in another direction—namely, in the fact that the first sound can be heard independently of the existence and action of mitral and tricuspid valves.

Concerning the mitral regurgitant murmur and the systolic murmur without regurgitation, the author goes on to say that these murmurs, striking and characteristic as they are, are merely accidental complications which occur at the moment of the systole of the heart; but they are unconnected with, and have no relation except in point of time to, the healthy first sound, which may be heard apart from, and independently of, them. The weight of evidence, then, is clearly against the possibility of the structure or the functions of the auriculo-ventricular valves being the source whence proceeds the first sound of the heart.

Two other phenomena occur synchronously with the systole of the heart, and consequently with the occurrence of the first sound. They are the contraction of the muscular walls of the ventricles, and the propulsion and movement of the blood from the ventricles into the arteries.

The Muscular Contraction of the Walls of the Heart during Systole is not the Source of the First Sound of the Heart.—The sound produced by muscle during its contraction, says the author, was first described by Dr. Wollaston, who compared it to "a sound which resembles most nearly that of carriages at a very great distance passing rapidly over a rough pavement." It is very difficult to conceive, he continues, the slight, soft, rolling sound produced by muscles in action being convertible into the loud, booming first sound of the heart. Yet the theory is accepted. If muscle during contraction could produce so marked a sound, we should expect to find that the powerful muscles of the neck attached to the base of the skull and those attached to the jaw (being through the bones of the skull in direct relation with the hearing apparatus) would give us some striking evidence of the production of muscular sounds when they are thrown into strong action. But there is nothing of the kind. The author states that he has failed to hear such sounds when listening to the powerful contraction of the biceps, or on listening to the contraction of the shoulder muscles of a strong cart-horse struggling with a heavy load in ascending a hill. He could hear no other sound save the soft, rolling sound described by Dr. Wollaston. Still, he adds, many observers have argued that the contraction of the walls of the heart differs from the action of the skeletal muscles, and that it is this peculiar form of contraction which causes the first sound. With a view to showing how large a share the sound of muscular contraction has in producing the first sound, observers have cut off altogether the supply of blood from the cavities, and on listening during the contraction of the heart have heard a systolic sound. Such were the old experiments of Ludwig and Dogiel, represented as confirmed by Krehl and by Kasem-Beck.

The author refers to experiments of other kinds which, he says, have been employed to show that the contraction of the muscle is a source of the sound. Hürthle and Einthoven show graphically that the first sound begins with the very beginning of the systole, before the ventricle has got power "to open the valves." This observation, he adds, is entirely consistent with the view he proposes. The moment the ventricle begins to contract the impact of the blood against the semilunar valves begins, producing the commencement of the sound, not when the valves are thrown open. The valves being connected with the fibroid ring surrounding the base of the heart, with which also the muscular walls are continuous, the sounds are conducted to the apex. Pathology confirms this view. It was observed by Dr. Stokes, he says, that in the course of typhus fever the first sound of the heart gradually disappears. After death it is found that the walls of the heart are softened, and this morbid state has been accepted as a proof that muscular contraction is the cause of the first sound. The real explanation is that the impulse of the heart is so feeble that it is unable to produce the sound at the valves. The correctness of this view is confirmed by the fact, recorded by Dr. Stokes, that the last point at which the sound disappears is over these valves, and that it is at the same point that the returning sound is first heard.

Sir Richard Quain says: "Having thus endeavored to show that the cause of the first sound is independent alike of auriculo-ventricular action and of muscular contraction of the walls of the heart, I proceed to consider a third event, the most striking and important of all those which occur during the systole of the heart—that is, the propulsion of the blood contained in the ventricles into the pulmonary artery and the aorta, and herein to indicate what seems to me to be the agency by which the sound is produced.

"*The First Sound of the Heart is caused by the Impact of the Blood driven by the Action of the Muscular Walls of the Ventricles against the Block produced by the Columns of Blood in the Pulmonary Artery and Aorta which Press upon the Semilunar Valves.*—I would adopt the explanation suggested by my valued friend, the late Dr. C. J. B. Williams, that 'sound is a phenomenon resulting from resisted motion.' Let us examine the condition of the circulation with regard to this particular point—namely, resisted motion. In this inquiry I have derived most important assistance from the admirable and elaborate researches of Professor Bell Pettigrew, F. R. S., first on The Arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart, published in the *Transactions of the Royal Society of London*, 1864, and, secondly, on The Relations, Structure, and Functions of the Valves of the Vascular System, published in the *Transactions of the Royal Society of Edinburgh*, 1864. These refer especially to the left ventricle, but, at the same time, it is to be observed that what applies to this ventricle applies, only in a lesser degree, to the right ventricle. Professor Pettigrew explains the manner in which the column of blood, projected from the heart into the aorta, is formed by the union of three columns—an arrangement which results from the mechanism of the heart as fully described by him. These columns ultimately unite into one before reaching the orifice of the aorta. The columns have a spiral motion, which is the result of the spiral arrangement of the musculi papillares, of the spiral arrangement of the fibres composing the walls of the ventricle, as well as of the spiral shape of the left ventricular cavity itself. These points, illustrating the character of the flow of the current, are shown in the blood-cast from the interior of the left ventricle of a horse, which, by permission of the President of the Royal College of Surgeons of England, I am able to submit to examination.

"By this spiral, or what might be called 'rifle,' motion the blood is seen to be directed against the segments of the semilunar valves, which are thereby hastily thrown apart, the spiral current being continued for some distance within the aorta. The beautiful rifle mechanism here described is constructed with the definite objects of giving precision to the direction of the moving body against a given point and of securing greater velocity and force in that body—the moving column of blood. We have, in fact, here represented in nature—a matter of the deepest interest to the biologist—the mechanism of the comparatively modern rifle. The resistance to the stream of blood issuing from the ventricle is offered by the block formed by the column of blood resting on the aortic valves. These in their action are described by Professor Pettigrew as 'closed by a spiral movement, by which these valves are wedged, and, as it were, screwed, more and more tightly into each other'; the movement here—the spiral movement—being caused by 'the direction of the sinuses of Valsalva, which curve toward each other and direct the blood in spiral waves upon the mesial line of each segment.'

"We find that various estimates have been given of the absolute propelling power of the ventricles and of the resistance of the column in the pulmonary artery and in the aorta respectively. For example, Professor Michael Foster says: 'If we take a hundred and eighty grammes as the quantity in man ejected at each stroke at a pressure of 3.21 metres of blood, this means that the left ventricle is capable at its systole of lifting a hundred and eighty grammes 3.21 metres high—*i. e.*, it does five hundred and seventy-eight gramme-metres of work at each beat.' Different estimates of the propelling force are given by physiologists, and the estimates of the resistance vary more even than the estimates of the propelling power. It will therefore suffice to say that authorities are substantially agreed that the driving power and the resistance are in the proportion of four to three, the really important point for our present purpose being the relation they bear to each other. In the emotion thus described and the resistance we have all the elements for the reproduction of a sound; and a sound being produced, we ask what it is. The reply must be: The first sound of the heart, the cause of which we now seek."

If it is admitted, the author continues, that sound is a result of resisted motion, there is in this instance a remarkable illustration of movement and resistance. The movement of the blood with all the force, precision, and velocity of a rifle or spiral movement is directed against a fixed and definite resistance, the moving power and the resistance being capable of definite measurement and found to be quite sufficient themselves to explain the source of the sound of which we are in search.

The author alludes to another point of interest—namely, that the sound disappears last over the semilunar valves, and also that the returning sound is first heard in the same situation. It is also an object of great interest, he says, to compare the characters of the two sounds in relation to the seat of their origin at the semilunar valves. In the first sound there is the character of propulsive force and sustained action, softer and more prolonged than the second, which is sudden, sharp, and short, as if produced by an abrupt mechanical disturbance. These distinctions, he says, serve to convince us that the sounds are both produced at the same point, at the semilunar valves, each by its own single and simple agency.

Lastly, he adds, sounds resembling the first (and second) sound of the heart can be produced artificially. The author here gives a detailed description of how the experiment was made with a sheep's heart.

In conclusion, Sir Richard Quain adds that the explanation of the cause of the first sound of the heart given here is so different from that hitherto accepted that it may seem to give rise to difficulties in the diagnosis of valvular disease of the heart. Closer consideration, however, he says, will show that, like all accurate knowledge, it will be found to simplify and not to confuse. It will afford, he says, an explanation of the relations of certain morbid phenomena which are at present unintelligible—such, for example, as that a systolic murmur may be heard at the apex while the first sound is audible at the base free from murmur; and it will serve to encourage a closer study of the relation between muscular contraction of the walls of the heart and the tension of the vessels of the system.

Infantile Scorbutus.—This disease, says Dr. Floyd M. Crandall in the July number of the *Archives of Pædiatrics*, occurs in every grade of life, but is more frequent among the rich than among the poor. The neglected child, he says, who eats everything at the table may become rhachitic or marasmic, but he obtains enough fresh food to protect him from scurvy. It very rarely occurs in asylums and hospitals, because in recent years feeding in such institutions has been more rational than in many private families. It may appear at any period of infancy or early childhood, but is most common between the ninth and fourteenth months—that is, at about the end of the first year.

Dr. Crandall divides the essential symptoms into two groups, according to their frequency and importance. In the first, or primary, group are: Pain on motion, painful swelling of the lower extremities, and spongy and bleeding gums. The secondary symptoms are: Subcutaneous hæmorrhages, pseudo-paralysis, and hæmorrhages from the cavities of the body.

Pain on motion is a constant symptom; it develops early, and is frequently so intense as to cause the child to cry out at the slightest jar or motion. In the early stages it is frequently difficult to determine its exact seat. The mother is sometimes positive of its presence before it can be located, or any swelling or other local evidences of disease can be discovered.

Painful swelling of the lower extremities is one of the most characteristic and constant symptoms; the upper extremities are rarely involved. The thigh is affected more frequently than any other region. The swelling is above and not at the knee joint, as in rheumatism. The skin over the swelling is, as a rule, tense and shining; it is often purplish or livid, but sometimes appears normal in color; it is of normal temperature, and does not pit on pressure. As the swelling subsides, thickening of the shaft of the bone is in some instances detected. Liability to fracture at the epiphysis is a marked feature.

The condition of the gums is also, says Dr. Crandall, a very constant and characteristic symptom. They are purplish, soft, spongy, and bleeding, and frequently show decided ulcerations. When the teeth have not come through, changes in the gums are usually slight or entirely absent.

Subcutaneous hæmorrhages as well as hæmorrhages from the cavities of the body are, says the author, very common, but are not necessary to a diagnosis of scurvy. A varying degree of immobility of the extremities is also common and the condition is frequently so marked as to simulate paralysis. Fever is often present, and is usually intermittent in character. Diarrhœa is more frequent than constipation. Dr. Crandall sums up the clinical characters as follows: Anæmia, intense pain on motion, spongy and bleeding gums, and swelling of the lower extremities, usually at the thigh. There may also be purpura or ecchymoses, discharge of blood from the various cavities of the body, and pseudo-paralysis. It may be mistaken for rheumatism, stomatitis, rickets, sarcoma, osteitis, and infantile paralysis.

Scurvy, when untreated, says Dr. Crandall, is a very fatal disease; when it is recognized and properly treated, a rapid and complete cure is usually effected. The result of antiscorbutic treatment is, in fact, one of the most certain means of diagnosis. There is, without doubt, he thinks, some uncertainty regarding the true nature of scurvy and its causes, but from the standpoint of treatment it is a dietetic disease and must be cured by dietetic treatment. Certain complications and coincident conditions may be relieved by drugs, but it should be clearly understood that drugs are absolutely unavailing for the cure of scurvy. Fresh cow's milk, properly modified, is alone capable of effecting a complete, speedy, and brilliant cure. Expressed beef juice and orange juice are valuable adjuvants, and should be employed in all serious cases if their administration is tolerated.

Bilious Grippe.—Among the various forms of grippe, says M. Jasiewicz in the *Journal de médecine de Paris* for June 6th, there is one form which he has never observed except in isolated cases. It is a variety which is characterized by bilious vomiting, and it is entirely definite and distinct from other forms. The author refers to twenty cases which have come under his observation in which the symptoms were as follows: In general the onset was sudden, without appreciable prodromes, although occasionally there was a chill. Bilious vomiting occurred early and was abundant and sometimes obstinate. The tongue was dirty and saburral, and was frequently red at the point and on the edges and sprinkled with red dots. The condition was slightly feverish; there were anorexia, flatulence, and even marked abdominal swelling, with pains sometimes localized in the right iliac fossa. There were constipation, headache, lumbago, and more or less profuse night sweats, also occasionally slight affections of the respiratory tract.

In the beginning of the epidemic the author thought it was simple gastric disturbance, but the repeated number of similar cases, the evidently epidemic and infectious character of the disease, the sanitary condition of the locality, the atmospheric conditions, etc., led him to make the diagnosis of bilious grippe. The author uses this term now because the cases observed by him for several years did not present with so much distinctness and intensity the bilious vomiting which, on several occasions, especially in children, constituted all the symptoms of the disease in the cases referred to. In an observation made in the year 1890 to the Société de médecine pratique he spoke of this symptom only as an exceptional characteristic which he had rarely met with in cases submitted to his subsequent observation, while in the present epidemic it was the dominant symptom. For this reason, he says, he employs the expression bilious grippe, although gastro-intestinal bilious grippe may be preferable, for it was certainly the excessive secretion of bile which played the principal rôle, as the bilious vomiting testified and, in two cases, the bilious diarrhœa.

The author questions whether we might not be led to suspect another disease, influenzal inflammation of the vermiform appendix, for example, as certain circumstances had inclined him to believe was possible. That abdominal grippe may be complicated with inflammatory symptoms in the cæcum and the appendix is not to be doubted, he says, since the entire surface of the mucous membrane remains the seat of an inflammation which is sometimes intense and of an infectious origin, as was the case in some of the cases he narrates. But what M. Jasiewicz contends is that, in influenzal appendicular inflammation, what dominates the disease is not generally the inflammation of the appendix, but the grippe, epidemic and infectious; it characterizes the affection, and that alone should indicate the method of treatment.

In spite of a relapse of the symptoms in some of his patients, in spite of the predisposition in others to gastro-intestinal symptoms, the author does not hesitate to pronounce it bilious grippe, that is to say, gastro-intestinal grippe with a predominance of the bilious vomiting. Concerning the frequency of this symptom, which was observed during these weeks, the author thinks it is a question of atmospheric conditions, on which, however, it is still difficult to give an opinion, in spite of the interesting investigations made by M. Dignat.

The disease, with the exception of two or three cases, was always benign, and after a few days there were no traces of it left, especially in children. In several patients, however, after the symptoms disappeared, weakness and a copious perspiration continued.

The treatment consisted especially in the employment of purgatives, preferably calomel, in order to reestablish the course of the stools and to cleanse the digestive tract. Quinine was prescribed to combat the fever and the infectious element; laxative and antiseptic powders were employed for the saburral condition of the digestive tract, the tendency to constipation, the abdominal swelling, etc.; ice, effervescent drinks, and Riviere's potion [similar to our liquor potassii citratis] for the vomiting; antipyrine to allay the pains; and strychnine to arouse the failing strength.

Creosote Enemata in the Treatment of Broncho-pneumonia.—In the *Journal des praticiens* for June 12th, M. Schoull refers to the favorable results obtained in the year 1892 in the treatment of typhoid fever with grave pulmonary complications from the use of large quantities of creosote given in enemata, and says that in 1894 he observed their efficacy in broncho-pneumonia. He states that since 1893 he has always made use of this mode of treatment, and he unhesitatingly affirms that its action is perfect. He also refers to the results obtained by M. Sezary, of Algiers, who combined this treatment with the use of cold baths in typhoid fever, and found that in his cases the respiratory symptoms were less marked. This fact, says the author, should not be attributed to climatic influence, for even during the mildest period of the year pulmonary complications are frequent in the typhoid fever observed in Africa; he was able to convince himself of this during the four years he lived in Tunis, where he had occasion to attend a considerable number of typhoid-fever patients during several very serious epidemics.

M. Sezary thought that in his cases the creosote had prevented the swarming and the noxious action of the pathogenic micro-organisms, and this, the author says, corroborates the results which he himself has obtained with creosote enemata. Quite recently M. Casati found that the internal use of creosote in large doses was a good method of treatment in acute pulmonary inflammation, broncho-pneumonia and fibrinous pneumonia, both in adults and in children. According to him, it exerts an antiseptic action on the pneumococci, and, while stimulating the heart, according to Fernet, it has a manifestly favorable influence on the evolution of the pneumonic process. It is to be hoped, says M. Schoull, that this statement will do more for the adoption of the creosote treatment in broncho-pneumonia than all the efforts of an unpretending provincial physician. He wishes it understood, however, that he does not agree with M. Casati as to the mode of administration, for in these particular cases the doses of creosote must be large in order to be effective, and the stomach does not easily tolerate large doses of creosote; intolerance occurs rapidly and gastric troubles are soon produced. The intestine, on the contrary, shows a remarkable tolerance for this drug, and Revillet was able in this way to administer as much as sixty grains of creosote without provoking any intolerance. The author also has frequently administered thirty grains and more without observing accidents. It is sufficient, he says, to watch the urine, the blackish color of which is one of the first signs of poisoning. Regarding other symptoms of chronic creosote poisoning, they are not to be feared in cases of this kind, as the duration of the treatment is short.

These enemata, according to the author, are easily retained; they also provoke constipation, which, in cases of diarrhœa complicating phlegmasia of the respiratory tracts, is, he says, an advantage. If the enemata should not be retained, a few drops of laudanum may be added. The author finds that the simplest and most practical means of administering the creosote is in milk; the amount of creosote for a child under a year is from two to five drops night and morning; for an adult, from thirty to forty and even fifty drops in each enema. The quantity of milk should not exceed an ordinary glassful, in order for it to be retained; this quantity will, of course, vary according to the age of the patient. The enema should be given warm; if it is evacuated immediately or within a short time, it is necessary to give a second one. If no movement has been produced for a day, the intestine should be emptied with an enema of warm water and glycerin.

The creosote treatment, M. Schoull says, is easily tolerated at all ages. He has used it in a child of two months without any inconvenience, also in a woman, ninety-one years of age, who was attacked with the broncho-pneumonia of influenza; in this case the patient recovered and is to-day a vigorous old woman of ninety-three. The effect of this treatment is generally rapid; very frequently in from three to five days, sometimes even more promptly, the stethoscopic symptoms are modified, and the fine râles are replaced by coarser ones, which soon become transformed into simple sibilant râles. The viscous, muco-purulent, and sometimes bloody expectoration loses its characteristics and becomes frothy. Respiration becomes freer, the pulse becomes normal, and the temperature is lowered. This, says the author, is no doubt due as much to the diminution of the inflammatory troubles as to the antithermic action of the creosote. Finally, the general symptoms are ameliorated and the appetite returns. The duration of the disease does not exceed two weeks.

The author gives an account of some cases in which he has used this treatment, also the results which he has obtained, and, although the statistics may appear to be astonishing, they are, he says, rigorously exact. From all this he concludes that the use of creosote enemata is a peculiarly efficacious mode of treatment in broncho-pneumonia; one that is without danger and always easy of application.

The Antitoxine Treatment of Diphtheria.—The *Lancet* for June 12th contains an editorial on this subject in which the writer states that the results of this treatment have been of a striking character in diphtheria. He refers to the statement made by Dr. Roux at the International Congress of Hygiene at Budapest in 1894 that the continuous employment of this method of treating diphtheria at the Hôpital des enfants malades from February to July, 1894, had been followed by a reduction in the diphtheria mortality from 51.7 per cent. —the average of the previous five years—to 24.5 per cent., whereas the rate during the same months at the Hôtel Trousseau had been as high as sixty per cent., and the testimony in its favor since then had been very large. It is true, the writer continues, that contrary statements have been quoted which seem to tell a different tale, but he thinks they only serve to confirm the general opinion as to the value of the treatment, for on scrutiny they are deprived of their significance. Professor Ganghöfner, he says, mentions that adverse opinions have been expressed by Professor Sorensen, Professor Kohts, and Professor Müller, although he points out that in each instance conclusions have been drawn on too slender a basis and without adequate trial of the serum. For instance, Professor Sorensen, in two papers on this subject, contrasts his experience of fifty-one patients treated with the serum with forty-six not so treated. In each series the mortality was thirty-three per cent., but, believing that the injections favored a tendency to hæmorrhage, he seems to have used them with great caution, giving only small doses and often delaying the administration for days. Seeing that the success claimed for antitoxine mainly rests upon its earliest possible administration, and that, too, in ample dose, Professor Sorensen's negative results are not surprising. In a further return Professor Sorensen records nine deaths in eighty cases in which the serum treatment was used, but only five deaths in a hundred and forty without serum, but here the fallacy of selection renders the comparison useless, since the serum group contained twice as large a proportion of severe cases as the non-serum group, and, moreover, in eight of the nine fatal cases the serum was not injected until from the third to the fifth day. Professor Müller's figures from the Halle surgical clinic, showing a mortality of fifty per cent. after tracheotomy in patients treated by serum, and of forty per cent. in those not so treated, are, he thinks, also open to the criticism that in three fourths of the former class the injections were delayed until the fourth or fifth day, and in some were of very small amount.

Professor Kohts's figures, also based on the mortality after tracheotomy, showed but slight difference between the two classes, only his cases were too few in number to allow of any definite inference. Yet even here the mortality was much lower than the average for the preceding five years. But in all these comparative statistics there lurks the great fallacy due to the selection of cases submitted to antitoxine, in some cases there being no treatment because of their mildness and in others because the subjects were moribund on admission to the hospital. This fallacy has been obviated in the statistics furnished by the medical superintendents of the hospitals of the Metropolitan Asylums Board by contrasting the relative mortality of all cases in the year 1896 (including those in which antitoxine was used and those in which it was not used) with that obtained in the year preceding the introduction of the antitoxine treatment. The results of that comparison harmonize with the admitted fact that, as a whole, the death-rate from diphtheria, not only in London, but in all great centres, has fallen since the introduction of the remedy. As regards these statistics of the Metropolitan Asylums Board, the writer thinks attention should be particularly directed to the most striking reduction of mortality effected in those patients coming early under treatment—a fact in favor of the remedial action of antitoxine which is demonstrated with special force in the case of post-scarlatinal diphtheria, where it was mostly possible to carry out the administration very early indeed.

According to the writer, the utility of the treatment does not rest solely upon statistics, which, however carefully compiled, are open to fallacies due to the varied conditions which must of necessity prevail. It depends quite as much, he thinks, on the general consensus of opinion among those physicians who have fairly employed the serum that its use is followed by results no whit less certain than those which are ascribed to other drugs believed to have a specific action. Thus, in prescribing antitoxine the physican feels sure of obtaining results as definite as those which ensue on the administration of quinine in ague or salicin in rheumatism. These effects consist in the main in the cessation of the spread of the diphtheritic membrane, its speedy deliquescence, together with a corresponding diminution in the intensity of the local inflammation. It is probably owing to this striking action of the arrest of the local process that under this treatment fewer patients with laryngeal diphtheria are now operated upon and that the percentage of recoveries after operation is larger than it was.

This the writer thinks can not be explained, except on the ground that the antitoxic serum acts directly upon the virus, preventing further mischief, although it is powerless to remove lesions already established by the poison. No objection to its use, he thinks, can be based on the fact that certain complications seem to have become more frequent, for, if through its agency in certain cases life is prolonged or preserved, it would be in these very cases that one might expect the effects of the original virus to be most manifest.

It is gratifying, he says, to have the assurance of the medical superintendents of the fever hospitals that in all their wide experience they have not met with any effects attributable to the injection itself which were of a nature to cause anxiety. The writer states that since its general adoption there have been a few isolated instances of apparent fatal injury, but according to those who have investigated such cases they are one and all capable of other explanation. He refers to a case which occurred in Berlin last year, in which it was confidently affirmed that the fatal result must be attributed to cardiac paralysis excited by violent coughing from the inhalation of vomited matters in a susceptible subject, and not to the direct action of the serum or its injection. The subject, he says, is discussed in Professor Ganghöfner's monograph, where the grounds for this conclusion are entered into. The case referred to was the more distressing from the fact that the injection was being practised, not for treatment, but for prophylaxis. He thinks it is remarkable, considering the short time that has elapsed since the method was introduced and the necessarily tentative nature of its application, that so large an amount of confidence should have been awarded to it, and that this fact by itself surely testifies to its efficiency, and encourages the hope that with time and experience still more favorable results will be obtained.

The Cutaneous Absorption of Iodine, Iodoform, and Ethyl Iodide.—The *Province médicale* for June 12th contains an account of a recent meeting of the Société des sciences médicales de Lyon at which M. Lannois read a paper on this subject. Many observers, he said, had long ago shown that after painting the healthy skin with the tincture of iodine a small quantity of this drug was found in the urine. It was easy to verify this, and it might be considered as an established fact in spite of several adverse experiments. According to Dechambre, the same results were obtained after the application of cotton saturated with iodine.

The substances which lent themselves more readily to epidermic absorption were those which, with an elevated point of ebullition, presented, at the ordinary temperature, a certain tension of vapor. Iodine, boiling above 392° F. and slightly volatile at the ordinary temperature, realized these conditions, but it presented, besides, a property capable of producing a certain disturbance in the phenomenon of absorption; it modified the skin.

M. Lannois stated that he had constantly employed four cubic centimetres of the tincture of iodine of the codex for each application. In the first series of experiments the part painted had been left exposed to the air; in the second series, it had been covered with an impermeable layer of thin gutta-percha. Consequently, after the painted part had been exposed to the air the quantity of iodine which was eliminated by the urine was very small and did not exceed several milligrammes. When the painted part was covered, however, absorption was much more active, the quantity absorbed being seven and even twelve times as much as in the preceding case.

The much greater intensity of the absorption when the painted part was hermetically wrapped certainly proved that the skin was the principal tract of penetration, and the respiration of diffused vapors played only a secondary rôle. Besides, it was during the first hours that the urine contained the most iodine, and, consequently, the alteration of the skin was the effect and not the cause of the transition of the iodine, and, once it was constituted, it seemed to be an obstacle rather than a condition favorable to absorption when it did not reach the rete mucosum.

All volatile combinations containing iodine, said M. Lannois, might be employed to introduce the drug into the organism by the cutaneous tract, such as iodoform and ethyl iodide; the latter especially was absorbed in a sufficiently large quantity to render its employment useful in a general iodine medication.

The Ambulatory Treatment of Fractures of the Leg—At a recent meeting of the Académie de médecine, a report of which is published in the *Journal des praticiens* for June 19th, M. Reclus stated that the apparatus employed in this treatment consisted of three pieces: The first was a plastered boot, somewhat short; the second was formed of two plastered stiffeners applied to the upper part of the boot, and formed a point of support for the third piece, which was a firm metal strap the two upper ends of which rested on the stiffeners; the lower part was intended to rest on the ground. A plastered band held it in the proper position. In this way the reduced fragments could be maintained and at the same time the patient was able to walk; the part of the limb subjacent to the fracture hung, to some extent, free inside of the strap.

M. Reclus said that not only were the patients enabled to continue their occupations by means of this apparatus, but it hastened somewhat the formation of the callus, and above all avoided atrophy of the terminal segment of the limb and stiffness of the articulations.

The Treatment of Pain in Ataxia with Methylene Blue.—The *Gazette hebdomadaire de médecine et de chirurgie* for June 17th publishes a report of a recent meeting of the Société de biologie at which M. Lemoine stated that he had experimented with this drug in nine cases with the following results: In two cases no amelioration was obtained; in five cases the intensity and the frequency of the pains were greatly diminished; and in two cases there was complete and prolonged cessation of the pain. The pains which yielded the most quickly under the action of the methylene blue were the shooting pains of the limbs and the girdle pains. The pains which were the most refractory were the visceral pains, especially those in the stomach and in the rectum. The vesical pains disappeared rather more quickly. The two patients in whom the treatment entirely failed had presented gastric pains to the exclusion of all others. The effect of methylene blue was very rapid and the diminution of pain occurred two or three hours after the urine was colored blue. One advantage of this treatmen Lemoine said, was that the effects persisted for several days after the patient stopped taking the drug, and even for several weeks. Not only, then, did this treatment produce quieting effects almost immediately, but the results were lasting.

Monimia Rotundifolia and Boldo.—These two plants, says a writer in the *Journal des praticiens* for June 12th, are allied in their chemical, physiological, and therapeutic characteristics. Each contains an alkaloid, boldine, a volatile oil, and a glucoside. The boldine is extracted from the leaves of the boldo by Bourgoin's and Verne's procedure; it exists also in a larger quantity in the *Monimia rotundifolia*, according to Rochebrune. It may crystallize in extremely small crystals consisting of a mass of very fine and very short hyaline needles inserted vertically into stems intersecting each other at right angles and having the aspect of numerous branches like those of a tree, and tangled in every direction. The leaves of monimia, like those of boldo, contain a glucoside called by Chapoteaux boldoglucine.

According to Sigismond Pascaletti, boldine, by its local action, influences the peripheral nerves more than the striated muscles; it diminishes the electric excitability of the nerves when they are bathed in a solution of this salt; in deep intramuscular injections it paralyzes the neighboring sensory nerves, renders the muscles rigid, diminishes tactility, and anæsthetizes the parts around the point of injection.

Concerning its general action, it first excites then weakens the central nervous system. In cases of poisoning the bulb is the last to be attacked, the respiratory centre being the first, for the heart continues to beat a long time after the arrest of respiration. Boldine modifies the frequency of the respiratory movements; the urinary secretion is increased, but no albumin is produced; the temperature is not changed. The boldine of *Monimia rotundifolia* acts exactly like that of *Peumus Boldo.*

Boldoglucine, according to Juranville and Laborde, is a hypnotic analogous to opium and to chloral. Laborde observed that after intravenous injections of this substance in dogs there were excitation and an increase of the various secretory functions, notably of the bile, the saliva, and the urine. Rochebrune observed the same effects with the boldoglucine extracted from the *Monimia rotundifolia.*

In therapeutics, boldine has been recommended in hepatic affections; it increases in a marked manner the elimination of urea and heightens biliary secretion. Its effects are shown at first by the increase of this secretion, the result of which is diminution of the hepatic congestion. It is especially in hypertrophy of the liver of malarial origin that this alkaloid manifests its good effects. On account of their hypnotic properties boldine and boldoglucine will become valuable in diseases of the liver which are accompanied by violent pains. Boldo may be administered as follows: Boldine, in granules containing a milligramme, from six to ten a day; boldoglucine, from 0.75 of a grain to a grain and a half a day; the wine of boldo, from three hundred to four hundred and fifty grains; the tincture, from fifteen to thirty grains; and the pearls of the essential oil, from three to four grains. The syrup or the elixir of boldo may also be given.

The Micromotoscope.—In the *Medical News* for June 26th Dr. Robert L. Watkins gives an account of a method by which living microscopic objects may be presented on a screen with a new instrument which he calls a micromotoscope. After overcoming several obstacles, he says, he has found it possible to do this directly by the use of a special arc light in connection with the microscope. The one great obstacle—heat—was still present. This dried the specimens so promptly that the living objects were killed and the method had to be abandoned. The appearance of the vitascope, however, he says, suggested the possibility of applying some such method to the studies he was pursuing. This proved perfectly successful. By means of this instrument he discovered that the active motion of living microscopic objects could readily be photographed. By using from fifty to a hundred and fifty feet of the vitascopic film, and taking a series of impressions in sufficiently rapid succession, he has been able to secure pictures which when passed through a lantern at the same rate of speed will present on a screen all the motions of the objects photographed, and can be witnessed by an audience of any size. This fact, he says, was recently demonstrated to a party of physicians who were especially invited to witness the exhibition.

Dr. Watkins thinks that the value of this discovery can not be overestimated, not only for use in studying the vital processes of microscopic life, but also as a method of teaching students and the public.

In his investigations, this method has been applied more especially to the study of blood-corpuscles, and he states that the active motion of the leucocyte can thus be readily reproduced. It may be seen to stretch out its fingerlike prolongations and then retract them. The nucleus may also be seen to vary its shape, to split up into two or more, and sometimes the cell itself to divide into many parts.

The accurate reproduction of these various vital processes of cell life, he thinks, will be of great assistance in revealing the exact condition of the blood, and help us to get one step nearer the ultimate processes of life. Dr. Watkins does not hesitate to say that various cells now known by different names will be found to be only transition forms of the leucocyte. The amœboid motion of the leucocyte continues sometimes for fully twenty-four hours after the blood is placed on the slide of the microscope.

The author thinks that there is another field of usefulness in which the micromotoscope will prove of service, and that is in the study of the life of microbes in stale urine and other fermenting fluids, and that it will be applicable also to the study of the motile efforts of all microscopic germs and bacilli.

To secure an appearance of continuous motion, he continues, these pictures must be taken in rapid succession, allowing an exposure of from one fiftieth to one twenty-fifth of a second; and to complete a full cycle of motion, as in the expansion and contraction of a leucocyte, requires from eight hundred to fifteen hundred successive pictures. The time between the first and the second photographs is two minutes; the others are fifteen minutes apart, allowing an exposure of from one to two seconds. The impression made by their rapid passage before the eye when placed in a vitascope gives the sensation of continuous motion.

A number of photographs accompany the article, which, Dr. Watkins says, present in a general way an idea of the successive impressions as they appear in the vitascope.

Prolapsus Uteri and its Treatment with Elastin.—In an article on this subject in the *Medical Press and Circular* for May 19th Dr. James Oliver recommends the employment of elastin in the treatment of prolapsus uteri, and states his reasons as follows:

"The vagina and broad ligaments are the structures immediately concerned in the production of prolapsus uteri; consequently, our attention will be devoted to the consideration of those physico-chemical changes which, occurring in these parts, lessen their stability and rigidity.

"Water enters largely into the composition of the various soft tissues of our bodies, and it is the presence of this compound in due proportion which determines to a greater or less extent the quality of firmness which is natural to each. It is, therefore, evident that if the amount of water which the tissues forming the vagina and broad ligaments should contain is greatly diminished, the tone of these structures will be impaired, and they will thus be rendered less capable of withstanding the influence of gravitation. After the menopause, and as senility advances, a process of undue desiccation is apt to occur in the genital tract, as well as elsewhere, and, although this may probably never be the sole agent determining prolapsus uteri, it will nevertheless be a powerful contributor.

"The rigidity of all tissues is, to a greater or less extent, dependent upon the presence of certain salts, and, as lime enters largely into the composition of the tissues of the generative tract, it is impossible that any very decided diminution in the quantity of this ingredient can take place without the rigidity and resisting power of the impoverished structures being thereby impaired.

"The vagina and broad ligaments are extremely elastic structures, and their utility is in a very high degree due to this property, which is attributable to the presence of a material called elastin. Should, however, the amount of this elastic substance, which is natural to these structures, be unduly diminished, their resisting power will be correlatively weakened, and gravitation will tend to drag down the uterus and annexa until a state of equilibrium is established.

"In the majority of cases, prolapsus uteri is caused by the deficiency or absence of elastin in the vagina and broad ligaments. This condition of affairs may be occasioned by the elastic tissue having lost the power of manufacturing material like itself, or by the nutrient fluid failing to offer in sufficient amount the ingredients necessary for this process. If the former state exist it may be impossible to restore the elastic property, but if the disorder has resulted from the deficiency or absence of the materials requisite for the maintenance of the integrity of the tissues, we may endeavor to supply these, and in this manner the tissues may be enabled again to combat effectually the influence of gravitation. With this motive, and with marked benefit in some cases of prolapsus uteri, I have administered an impure preparation of elastin, obtained from the ligamentum nuchæ of the ox. I hope soon to be in a position to test the utility of a more pure preparation of elastin, and give the results accruing from the administration of such."

Original Communications.

A NEW METHOD OF INTESTINAL ANASTOMOSIS.

By J. W. HARTIGAN, A. M., M. D., F. R. M. S., etc.,
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I present herewith a description of a new method of intestinal anastomosis.

By way of prologue, it will be proper to state, briefly, the methods that have been in vogue for the past century or more. Suggestions on intestinal stitching, so far at least as the large intestine is concerned, date back to the time of Celsus, and the interrupted suture and noose-loop were used by Sir A. Cooper, Ledran, Jobert, Palfyn, and Reybard when the wound was longitudinal or when it did not completely divide the continuity of the canal.

The glover's stitch and the continuous, as modified by Biclard, Bertrandi, and others, was also used for this class of cases.

In complete division of the continuity of the canal three methods were proposed for the reunion of the separated ends—viz.:

1. Union over a foreign body.
2. Union by invagination.
3. Union by approximation of serous surfaces.

All of these methods have modifications.

Union over a foreign body was practised by the Quatres Maîtres in the thirteenth century. They used the trachea of an animal, introducing it into the two ends of the tube, and suturing the edges of the gut. The trachea was passed by stool.

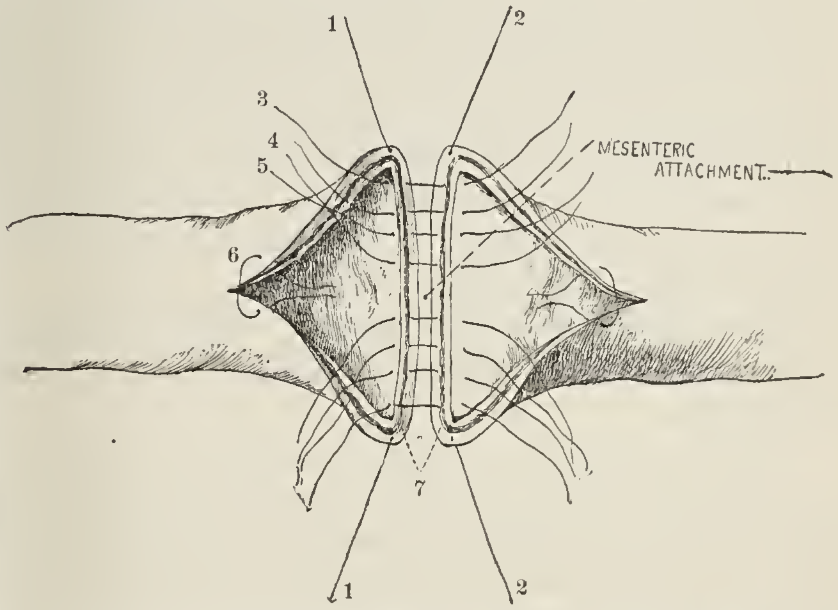
A cannula of elder was used by Theodoric Rigier and Garnier; a cannula of fish glue, by Watson; a cylinder of tallow, by Scarpa; an anointed playing card, by Desault, Chopart, and Ritch.

The operation of the Four Fathers was revived and modified by Duverger, and was named after him. Might not the operation of Professor Murphy be classified here as a great advance and improvement, however, on the methods devised by that surgeon?

Invagination was probably first done by Randhor about 1730. He introduced the upper into the lower end of the bowel, and made them fast by two sutures. His patient recovered.

It is unnecessary to recite the objections that were offered to this operation. It certainly was an advance in intestinal surgery, and, though it brought a mucous surface in contact with a serous one, it was but a short way to the method of "contact of serous surfaces," when it had been demonstrated, chiefly by Bichat, that union between serous surfaces was safer and more desirable.

Reybard incised the mesentery for a few lines parallel to the concavity of the tube, and drew one part within the other by two loops or sutures, one at each extremity of the antero-posterior diameter of the intestine. The threads were introduced so that one end was within, the other end without, the lumen of the upper end; the inner ends were then carried from within out through the walls of the lower end, and the parts invaginated by traction and made secure by knotting. This really brought the serous surfaces in contact.



1, 1, 2, 2, retaining sutures held by assistants (they should pass through the peritoneal coat; the cut shows them passing through the subperitoneal coat); 3, 4, 5, sutures; 6, a suture tied within the tube; 7, the peritoneal coat.

In 1824 M. Jobert practised a new kind of invagination. He dissected off the mesentery for a third of an inch, took a thread armed with two needles, and introduced one needle from within out through the coats of the upper end; this was repeated at the opposite end of the diameter. He then invaginated the lower end in such a manner that the serous surface was within the lumen of the gut, and passed the two needles of each thread from within out through the invaginated end of the bowel, emerging a line or so from each other. By gentle traction the upper end was pulled within the lower and a band of serous surfaces was in contact. He twisted the sutures and caused them to emerge from the external wound. His patients all died.

The method of *adossement*, proposed by Lembert in 1626, also brings the serous surfaces together, and his suture is used to-day. Murphy's method will also come under this classification.

The method of Maunsell is ingenious but rather difficult, at least that has been my experience in quite a number of operations on dogs. It succeeds in getting peritoneal surfaces together, and allows greater room in the cavity of the tube than is obtainable with the Murphy button. This point is in favor of the Maunsell method. The Murphy method is easy compared with it, and its disadvantages have already been considered in this *Journal* by the admirers in this country of Maunsell's operation.

In 1892 I described the following method in the presence of the medical students of the West Virginia University, in a lecture.

I had for some years been conducting experimental operations on dogs to determine certain physiological questions, and in many of these operations excised different parts of the intestine. In the reunions, or anastomoses, I used the varieties of operations known for that purpose, when the following method occurred to me, the important steps of which are as follows: A pair of sharp scissors is made to divide the entire thickness of the walls of the upper and lower ends of the divided gut in a longitudinal direction, at a point opposite the attachment of the mesentery, for a variable distance, a third to a half the circumference of the tube at the divided part. Instead of being the open ends of empty tubes they are flat processes, presenting very much the appearance of coat sleeves ripped up the seam for a variable distance and turned out flat.

Four sutures are next inserted, two in the upper flap and two in the lower flap—that is, one in each corner of each flap.

These are held by assistants, and when traction is made on them the flaps are stretched out flat at the cut ends. The mesentery, which has been excised, in case of excision of part of the gut, is united by the interrupted suture, and is not dissected back at all from the attachment to the intestine.

It is plain from this description that the mucous surfaces now look up—face the operator—and the peritoneal surfaces look down. Interrupted sutures are now passed, entering the mucous surface, say of the upper flap, passing through all the coats, emerging a fourth or an eighth of an inch from the edge of the peritoneal surface of the same flap, passing then to the peritoneal surface of the lower flap, entering this surface a fourth to an eighth of an inch from the cut edge, passing through all coats of the bowel, emerging from the mucous surface. Each suture is tied when put in, and by starting with one at the point of the mesenteric attachment, then taking sutures, first on one side of this point and then on the other, very accurate apposition of serous surfaces is obtained as the sutures are tied, one at a time, till the corners are reached. I have united these corners in a variety of ways, but no special method is necessary, except that the last suture should be as near them as is compatible with safety. A longitudinal wound now remains—no longer, however, than the one required to pull the ends of the gut through in the Maunsell operation. The longitudinal rent may be united by a suture made by passing the needle through all the coats, from within outward on one side and from without inward on the opposite side, and tying, when the knots will be within the lumen of the tube. The last two or three sutures may be of the Lembert variety, as the Vezien suture is hard to tie when the longitudinal rent becomes short.

Note.—Since this article was sent for publication the *Lancet* for May 22, 1897, has given the details of an operation of intestinal anastomosis which is practically identical with the one here described. Mr. G. Lenthal Cheatte, F. R. C. S., speaks of its applicability to different parts of the intestinal tube, etc. The coats of the bowel to be included in the suture will differ according to the surgeon who employs the method. Just as in operations for appendicular inflammation or other abdominal sections, some prefer to include all the coats in one or two lines of sutures, while others elect to employ one line for the peritonæum, one for the muscles and fascia, and a separate one for the skin.

REPORT OF THE
CLOSURE OF A PERMANENT FÆCAL FISTULA FOLLOWING APPENDICITIS IN TWO CASES.*

By H. O. WALKER, M. D.,

DETROIT.

A fæcal fistula following suppurative appendicitis is of frequent occurrence, yet it is a well-known fact that such fæcal fistulæ close without operative interference in the great majority of cases; in fact, it is rare that they do not close. In three hundred and fifty cases of appendicitis reported by Richardson and Fowler many fistulæ followed, but in only one instance was an operation required. "A permanent fæcal fistula, involving the large intestine (cæcum), is a very rare sequel indeed, and that one involving the small intestine is hardly mentioned as a possibility." † Such being the case, the report of the following two cases will be of interest.

Case I.—C. L. K., a clerk, aged twenty years, was first seen by me December 3, 1895, with Dr. H. A. Cleland, of Detroit, with the following conditions: Abdomen very much distended and tympanitic. Pain general over abdomen, and particularly so in the right iliac region; evident general suppurative peritonitis, the result of appendicitis, which began eleven days previously. The outlook was bad, yet it seemed advisable to give him the benefit of an operation, which I did, having had him removed first to Harper Hospital. On opening the peritonæum pus and seropurulent fluid spurted like a geyser, and several pints (approximated) escaped. No effort to find the appendix was made. Very little irrigation was attempted, owing to the great tympanitic distention of the intestines. As collapse was imminent, simple liberal gauze drainage was provided and the patient put to bed, surrounded with hot-water bags, and strychnine injections given. At the time of operation the temperature was 102.4°; pulse, 126, and very feeble. At midnight temperature was 101.4°, pulse 120. December 5th, temperature was normal and pulse from 90 to 100. On the 7th and 8th temperature was 101°, pulse, 96. After this temperature continued to rise to 102° and 103° every afternoon until the 20th, when it went to normal again. From this time on to January 30, 1896, there was increased afternoon temperature. At this date I made a secondary operation, removing the sloughing appendix. It was apparent that the abscess cavity extended into the pelvic cavity and well up underneath the cæcum. I made a counter opening in the right lumbar region in order to secure better drainage. During February and March there was a variable temperature from normal to 103°, with pulse up to 136 at times. During March there was evident circumscribed pneumonia of the lower lobe of the right lung. This, however, cleared up shortly. The fæcal discharge never ceased from the time of the first operation, with the exception of a few days following the second operation.

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* Extract from a paper on Abdominal Surgery, with Specimens, read at the Michigan State Medical Society, at Grand Rapids, May 13, 1897.

† Perkins, Ogden, Utah. *Annals of Surgery*, December, 1896.

April 20, 1896, he left the hospital for his home much emaciated yet able to be up and about his room. During the summer he gradually improved in general health and was able to go out, controlling to a certain extent the exit of fæcal matter by means of a pad and abdominal band.

November 17th he re-entered the hospital in the following condition: Weight, thirty pounds less than when first attacked; spirits good; temperature normal; pulse 90; sinus in lumbar region still open, and one extending into the pelvic cavity to the depth of six inches and a half; mucous ring protruding that would readily admit a medium-sized hen's egg through its orifice.

First, I thoroughly curetted both sinuses, irrigated with bichloride solution (1 to 2,000), and packed them with gauze; also washed out the intestine and plugged it with sterilized absorbent cotton. The method of operation was as follows: An elliptical incision was made surrounding the fistulous opening, going directly into the peritoneal cavity for the entire circumference. Adhesions were plentiful, but by careful scissors and finger dissection I succeeded in liberating the cæcum and ileum so as to bring the gut out of the abdominal opening. Great care was exercised in protecting the peritonæum with pads of gauze. The next step was the excision of the elliptical pieces of abdominal wall and cæcal orifice. I then closed the intestinal opening with interrupted fine black silk sutures after the Czerny-Lembert method. After dusting the parts freely with aristol the intestine was returned into the abdomen, which was closed with silkworm-gut sutures, leaving above and below openings for gauze drainage. On the twenty-eighth day after the operation he left the hospital, the wound having all healed with the exception of a small sinus at its lower end.

Case II.—J. G., aged forty-five years, referred to me by Dr. J. Williams, of Adrian, gives the following history of having had attacks of appendicitis for the last sixteen years, occurring usually about once a year and lasting from two to six weeks. In May, 1896, he had a severe attack lasting a month, and again on August 18, 1896, lasting until September 14th, when he was operated upon by a prominent surgeon and a large abscess cavity opened and drained. The external wound did not close until the latter part of December, 1896. It, however, reopened early in January, 1897, and has discharged pus and fæcal matter ever since. April 7th, when I first saw him, his general appearance was bad. There were two openings along the line of the old cicatrix. Although the fæcal discharge was not excessive it was quite evident that the fistula or fistulæ would not close of their own accord, and that a cœliotomy would be necessary to effect a cure, which was accordingly done April 14th.

The elliptical incision was made as in the previous case. The adhesions were extensive and dense, and it was necessarily a slow and tedious process to liberate the cæcum and ileum. After carefully curetting away all sloughing material I discovered two openings into the cæcum about an inch apart. I made these into one, and, introducing my finger, found the ileo-cæcal valve greatly constricted, its size being about that of an ordinary lead pencil. A half inch above the constriction an opening was found in the ileum. In attempting to dilate the constriction I tore the intestine at its superior convexity. The method of plastic closure was now the problem: whether to do a resection and an anastomosis with a Murphy button or closure by suture. I decided to do the latter. First dividing the walls between the fistulous openings, and then removing the superior part of the intestine at the junction of the cæcum and ileum together with the cicatricial mass, I then cut away the remains of each fistula and approximated the opening after the manner of a pyloroplasty, using for this purpose interrupted catgut sutures, and lastly covering it with an omental flap. The only unpleasant feature following the operation was a persistent hiccough for several days; temperature and pulse were normal throughout. He left the hospital May 5th, with the wound all healed except a small granulating spot where the drainage-tube was introduced.

As enterectomies for the closure of fæcal fistulæ are considered as most grave and difficult proceedings, the results in these cases reported are more than satisfactory.

THE
PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from page 17.*)

Part III.

Having described the various clinics, and the methods practised therein, I shall next attempt to detail the more important operations as I saw them performed. And first I should like to take up those done for *retroversion of the uterus.* I found the greatest diversity of opinion existing on this subject. Kümmell generally does a cœlio-hysterorrhaphy, but still sometimes practises Alexander's operation, with the results of which, he says, he is satisfied. Leopold has seen severe complications arising in labors as a result of previously performed vaginofixations of the uterus for retroversion. Therefore he has discontinued the performance of the operation, which he considers absolutely contraindicated where there is any possibility of a subsequent gestation. He now does cœlio-hysterorrhaphy for all operative cases of retroversion. He fastens the anterior wall of the uterus, a little below the fundus, to the abdominal wall with two medium silk sutures. These he leaves in place seventeen days. Leopold believes that if the operation is properly performed the adhesions between the anterior wall of the uterus and the anterior abdominal wall will not give way. Out of over seventy patients on whom this operation had been done at his clinic, seventeen were observed to go through normal gestation and normal labor, and in all of them the uterus after labor remained anterior. Sänger holds about the same position, and the only operation I saw him perform for cases of retroversion was ventrofixation. Zweifel has two methods of bringing the uterus forward and securing it there. If the woman is advanced in life, or if the chances are against her bearing any more children, he does a cœlio-hysterorrhaphy. In other cases he attaches the round ligaments close to the uterus to the abdominal wall—*i. e.*, he passes one or two sutures through the round ligament near where it leaves the uterus, and then passes the sutures through the abdominal wall and knots them externally. This is done on both sides, and thereby the uterus is kept forward without any sutures having been passed through it. Zweifel says he has seen complications arising during gestation following a cœlio-hysterorrhaphy; and hence, in cases where a gestation may be expected, he performs this modified operation. In Berlin vaginofixation is performed very frequently. It is practised on old and young, on married and unmarried; it is practised for retroversion, it is practised for prolapse. Martin, at present, seems to be its chief exponent. I saw him do the operation almost daily, often several times in a day. In cases of prolapse of the uterus he combines the vaginofixation with plastic operations. Ohlshausen and Winter also perform it frequently, sometimes also in cases of prolapse. Mackenrodt, who introduced the operation, is beginning to fight shy of it, and is aware of its dangers. Ohlshausen and Winter employ silkworm gut to sew the uterus to the vaginal wall. The other operators in Berlin all use catgut for this purpose. Mackenrodt sometimes sews the anterior wall of the uterus to the posterior wall of the bladder, the so-called vesicofixation. Rosthorn and Schauta are following the Berlin school, and are frequently performing vaginofixation. In Florence Pestalozza is doing vesicofixation; he is satisfied with the immediate results, but says it is too early to judge of the ultimate results. In Zürich Wyder regularly performs cœlio-hysterorrhaphy for retroversion, and is satisfied with it. Jacobs has given up ventrofixation entirely. He showed me three specimens in which the adhesions between the uterus and the abdominal wall had lengthened out to a firm fibrous band, from three to five centimetres long—all three patients had died of ileus. One of the ventrofixations Jacobs had done himself. In cases of retroversion he now opens the posterior *cul-de-sac*, breaks up the adhesions that are present, and closes the incision. He next incises the anterior vaginal wall from side to side, opens the peritonæum, and with two or three silk sutures sews the anterior wall of the uterus to the peritonæum covering the anterior wall of the vagina. He has seen such patients go through a normal labor and the uterus remain forward. In Paris I saw a somewhat modified cœlio-hysterorrhaphy done. By means of a heavy silk suture on either side, the uterus was sewed to the muscles and fascia on that side; these sutures were cut short and the skin was united over them. Aubeau incises the posterior vaginal wall, breaks up the adhesions, and introduces a large drainage-tube to push the uterus forward. This tube is fastened to the posterior vaginal wall by a silkworm-gut suture, a strip of iodoform gauze is introduced alongside the tube, and the vagina is packed with gauze. The tube is left *in situ* fifteen to twenty days. The slight adhesions which have formed as a result are broken up by massage, and the retroversion has been cured.

There is not much difference of opinion as to the best methods of curing *prolapse of the uterus*. In most of the clinics they strive to decrease the weight of the organ by amputating the cervix, and then depend largely on plastic operations done on the anterior and posterior vaginal walls to retain the uterus in place. Nowhere did I see ventrofixation performed for this condition. In Berlin, besides amputation of the cervix and extensive plastic operations, they frequently also sew the uterus to the anterior vaginal wall. Even in women past the childbearing period such operations are performed. So far as I know, Jacobs is one of the few in Europe who sometimes do a hysterectomy for prolapse. In younger women he depends on plastics and amputation of the cervix, if it is hypertrophied. In old women he does abdominal hysterectomy, leaving the cervix in place and fastening it to the broad ligament. He is well satisfied with the result of this operation. I saw Pestalozza several times perform Neugebauer's operation (the details of which I shall describe further on) in cases of old women with prolapse of the uterus.

As regards cases of pyosalpinx in Germany, and in Austria, where they generally follow the lead of the German school, they generally attack them through the abdomen. For unilateral disease, the appendages on the affected side are removed; for bilateral pyosalpinx, double salpingo-oophorectomy is performed. Mackenrodt and, to a less extent, Martin remove the pus tubes through a vaginal incision, even when the disease is bilateral. But not even they remove the uterus. In Padua, where, for some reason, they only see small pus tubes, the regular operative procedure is the removal of the uterus together with the appendages through the vagina; naturally, only in cases where both tubes are affected. In Bologna they always do a cœliotomy, and remove the appendages either on one side or on both. Pestalozza likewise attacks pyosalpinx through the abdomen, but if the disease is bilateral he also removes the uterus. Bumm stands alone in Switzerland in sometimes removing a pyosalpinx through the vagina. The French school in Brussels and Paris generally employ the vaginal route for the cure of this condition. Segond and others in Paris lay down the rule: "If unilateral, cœliotomy; if bilateral, vaginal hysterectomy with double salpingo-oophorectomy." There is considerable difference of opinion as to whether drainage is indicated or not. The materials employed are iodoform gauze (Hamburg, Leipsic, Zürich, etc.), plain sterile gauze (Dresden, Brussels), thymol gauze (Strassburg), and glass tubes (London). Many of the men only drain if a pus sac has been ruptured by the manipulation, or if there are extensive bleeding surfaces where adhesions were torn, or if the gut has required repair. Some remove the gauze drain after two or three days, and if no rise of pulse or temperature occurs, they close the abdomen with secondary sutures. Some men never drain at all, even though a pus sac ruptures. Bumm, in Basel, assured me that he never used drainage any more, whether the pus sac ruptured or not, whether he was operating from the vagina or from the abdomen. I saw Mackenrodt remove the suppurating appendages of both sides, and, though one of the tubes ruptured while the adhesions were being broken down, yet he closed the vaginal incision completely. The patient recovered without any rise of temperature or other untoward symptoms. Pestalozza rarely uses drainage, unless a pus sac breaks, and then he drains through the vagina, never through the abdomen. Novaro, in Bologna, operates in these cases through the abdomen. He drains where pus has escaped into the peritoneal cavity, where there are many bleeding adhesions, and where the gut has been injured. Where the gut has not been injured, he removes the gauze drain after forty-eight hours; if the pulse and temperature are normal, he dissects up the skin, muscles, and fascia on both sides and unites them with three layers of catgut sutures. Where the gut has been injured he leaves the gauze in place six days, then, if there are no contraindications, he closes the opening in the way described. He told me he rarely saw a case of ventral hernia following a cœliotomy. Jacobs, whenever it is possible, removes pus sacs through the vagina. If both sides are diseased, he first removes the uterus, then the diseased appendages. He generally closes the vagina, even though some pus has escaped into the peritoneal cavity.

For the cure of uterine fibroid tumors in Germany, for the most part, the supravaginal amputation of the uterus with its tumor or tumors is performed. The method generally employed is that introduced, I believe, by Zweifel. The vagina is not opened at all; the cervix and lower zone of the uterus are not removed, but are covered by flaps of peritonæum, which are cut very large. Sometimes a rubber tube is applied around the cervix to control hæmorrhage before cutting away the uterus with its growth. As soon as the uterine mucous membrane is exposed it is carefully cauterized with Paquelin's cautery. In these cases, as a rule, drainage is not used. In Berlin, Freund's operation is also practised, but the vagina is always closed after the uterus is removed. Rosthorn, in Prague, likewise does Freund's operation. Before opening the vagina from the peritoneal cavity he lets an assistant introduce through the vagina a grooved director with a long handle at right angles to the grooved portion. On this, as a guide, he cuts through the anterior vaginal wall close to the cervix. By this procedure the danger of wounding the bladder is reduced to a minimum. If the fibroids are small, almost all operators resort to vaginal hysterectomy. Most of them close the vagina after such a hysterectomy. Schauta, however, packs the vagina and lower part of the pelvis with iodoform gauze. When we come to consider the ground on which the French school stands, we find that they differ materially from their German brethren. They almost always attack uterine growths from the vagina. If the tumor is small it is removed together with the uterus, clamps being used to control hæmorrhage. If the growth is too large to be removed in this way *in toto*, the anterior wall of the uterus is incised in the median line; pieces of the tumor and of the uterine wall are excised until the fundus uteri can be drawn out anteriorly. Sometimes the posterior wall of the uterus is likewise incised in the median line, thus dividing the uterus into two lateral halves. The hæmorrhage is usually insignificant; should it be too free, a clamp is applied low down on each side, and this effectually controls the hæmorrhage while the *morcellement* is being done. In Paris even very large tumors are removed in this way. Jacobs now removes such tumors by *morcellement* where the operation does not last over an hour and a half. Tumors which would take longer than this to remove *per vaginam* he attacks through the abdomen. At Chrobak's clinic I saw Freund's operation performed, also Zweifel's, and once the operation of *morcellement*. In all cases the vagina is closed, and no drainage is employed. In Bologna the uterus with the growth is removed through the abdomen. In Milan I saw the old extraperitoneal treatment of the stump, which was constricted by a rubber drainage-tube, transfixed by two long needles, and brought out of the abdominal wound. In Zürich Wyder, if possible, enucleates the fibroids and closes the rents with silk. In cases where this is not possible he removes the uterus according to Zweifel's method. Bumm, in Basel, takes about the same ground as Chrobak. In London some men still perform Tait's operation, although I saw one of the best-known London gynæcologists forced to do a hysterectomy two years after he had removed both tubes and ovaries. The tumor in the mean time had increased considerably in size, and the hæmorrhages were severe.

The treatment of malignant disease of the uterus is, judging from the results and from the statements of the different operators, exceedingly unsatisfactory. Kümmell does vaginal hysterectomy whenever it is possible. He prepares the patient by the preliminary operation of scraping away as much carcinomatous tissue as possible and the application of the cautery. This is done two days before the major operation. If the case is a far-advanced one Kümmell uses the Paquelin cautery to free the uterus, and merely applies a clamp on each side to the tube with the ovarian artery. The cautery is employed rather than the knife or scissors, so as not to open up any new channels for infection. In cases not far advanced he performs vaginal hysterectomy in the usual way with clamps. Leopold removes the uterus only in very early cases of malignant disease. In all others he confines himself to the repeated application of the sharp spoon and cautery. He maintains that in all except the early cases this method of procedure gives better results than the more radical operation. Sänger puts the case fairly before the relatives of the patient, and is, to a certain extent, governed by their decision. He performs vaginal hysterectomy with the cautery and clamps. Ohlshausen and Winter have arrived at the conclusion that it is better to take out the uterus immediately after the preparatory application of the sharp spoon and cautery. They found, in a large number of cases, that if they simply scraped and cauterized the carcinomatous area the patients had a rise of temperature for several days, often with local inflammation about the uterus. They maintain that this is due to the absorption into the lymphatics of some of the carcinomatous poison through new channels opened up at the preparatory operation. They now find that where they take out the uterus at the same sitting the cases run an apyretic course. After the vagina is scrubbed with soap and water and cleansed with alcohol and a solution of corrosive sublimate, the carcinomatous masses are removed with a sharp spoon and scissors; then the Paquelin is applied very thoroughly. The instruments that are used for this are kept separate, and are not employed for the subsequent hysterectomy. Then the vagina is again scrubbed, also the vulva, the thighs, and the lower part of the abdomen. The operator and assistants again disinfect, and with different instruments the hysterectomy is then performed. Jacobs has for years been doing vaginal hysterectomy for carcinoma. With the immediate results he is very well satisfied, but with the ultimate ones he is extremely dissatisfied. He goes to considerable trouble in following his cases after operative procedures. Out of more than seventy patients from whom he had removed the uterus for carcinoma, only three were alive four years after the date of operation. He made the significant remark that in a few years hysterectomy for carcinoma would be an operation of the past.

THE EFFECT OF KINDERGARTEN WORK ON THE EYESIGHT OF THE CHILDREN.*

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After several years' investigation of the methods employed by kindergartners, and after a careful study of the results obtained by them, I am much impressed by their extreme value. The public kindergartens, in this and other cities, not only do a work of incalculable value, but they often do it under the most disadvantageous conditions. Many a child, let us remember, finds in the teacher the only real mother that he ever knew or ever will know, and in the *garten* the only home that in after life he can look back upon with any sentiment of pleasure or satisfaction. I accordingly feel like apologizing for the criticisms that I am about to make of certain defects, judged from the standpoint of the ophthalmologist, that the kindergarten exhibits. It is in this spirit that I present my paper.

The eyes of the infant are those of the savage—that is to say, they are adapted not for near vision, but for the distinct seeing of distant things. The structure of the eyeball, as well as of the other parts of the visual apparatus, indicates very plainly that quick perception of the images produced by objects lying without the immediate range has been considered, to the almost total exclusion of objects close at hand. This state of affairs persists in the individual almost without exception until extreme old age if, as child and man, he has led an outdoor life and has busied himself mostly with distant objects.

It would appear from the foregoing that however much we may have modified our other organs to suit our modern environment, we have not as yet evolved from a savage farsighted eye a shortsighted one that can be both safely and comfortably employed all day long in doing near work.

Even after a generation or two of civilization, those races that have been in a state of barbarism for many centuries resist the tendency that more civilized nations exhibit to change the original form of the eye. For example, of a hundred and four native New Zealand children of all ages, pupils in the Maori schools, only three per cent. were found to be myopic. Callan, of New York, examined four hundred and fifty-seven negro children between five and nineteen years of age; only 1.5 per cent. had become shortsighted in the primary grades, and less than 3.5 per cent. in the higher forms. The eyes of the Carlisle Indians were examined by Fox, of Philadelphia; only two per cent. of all grades were myopic.

On the other hand, Dr. Loring and Dr. Derby examined two thousand two hundred and sixty-five eyes of New York school children. Nearly one fourth of the pupils descended from German ancestors were myopic; one fifth of all the Americans were shortsighted, so were fifteen per cent. of the Irish scholars. Surely the shortsighted eye is the eye of civilization! In Dorpat, a few years ago, Koppe made a very careful examination of a large kindergarten and found not a single eye adapted for near work—they were all farsighted.

The hyperopia of the child is converted into myopia by a stretching of the eye coats, by enlargement of the whole globe, and by a consequent lengthening of the antero-posterior axis. If this abnormal stretching continues, as it often does, past a certain point, there is not only a reduction of vision through life, but certain destructive diseases of the ocular structures are produced or invited, many of them exposing the sufferer to partial or total blindness. This is, of course, apart from the pains, headaches, and general discomfort that attend this derangement of the vascular and other systems of the eye during the period of enlargement. Even when discovered and promptly treated, progressive myopia usually means anxious watching and frequent interruption of study, extending over the years that intervene between the commencement of the shortsightedness and the maturity of the myope.

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* Presented to the Kindergarten Conference, Chicago University, April 10, 1897.

But there is another condition of the savage or infantile eye that must not be overlooked, as it adds materially to the difficulties that the farsighted eye encounters in attempting to fix near objects. I refer to an improper *shape* of the eye, known as astigmatism, where the eyeball is not only too small—undeveloped if you like—but lacking in proper symmetry. Instead of being rather spherical it has an oval form, especially in front. Rays of light from an object falling upon such an eye make a blurred image on the retinal screen, it matters not from what distance they are observed. This condition is not only an incentive to eye strain, with its accompaniment of headaches, blurred vision, and general discomforts, but is a common determining cause of myopia. A larger proportion of astigmatic children eventually become myopic than those that are hypermetropic only. Finally, a difference in the refraction of the two eyes (one eye more farsighted or more astigmatic than the other, or one eye hyperopic only and the other astigmatic) makes it more difficult for the child to see close at hand than in the distance.

I do not say that the farsighted or astigmatic child can not see minute objects near at hand—we all know he can; but he does so always as a result of some effort, sometimes conscious, sometimes unconscious. If he is a healthy child, with good eye muscles and a good ancestry, and has not too much hyperopia or astigmatism and does his near work under fairly good conditions of illumination, etc., he may pass joyfully through life without ever knowing much about his small degree of farsightedness. This near-seeing is accomplished by means of his power of accommodation, exercised through his focusing apparatus.

Observations made upon thousands of school children of all ages from four to twenty, by investigators in this country and elsewhere, demonstrate that, under the pressure of study principally, the eyeballs tend to elongate and increase in size in direct proportion (1) to the number of hours *per diem* they are employed at near work, (2) to the age at which this near work is begun, and (3) to the disabilities (hyperopia, astigmatism, ill health, hereditary tendencies, poor light, and vicious habits) under which their studies are pursued.

Germany furnishes us with a fertile storehouse of facts touching this study of the eye defects of children. Let us look at some of the investigations made by observers in that country. For purposes of comparison the kind and amount of work have been divided into nine grades—the ninth being the most elementary with the fewest study hours—the first comprising the higher branches with a corresponding increase in the amount of near work.

Professor Cohn examined the eyes of 1,486 children attending the village schools of Silesia. They were not kindergarten children, and their hours of study during the year were comparatively few. The figures represent the percentage of myopia in each class.

IX........................	III	II	I
	1	2	3

He also examined twenty elementary city schools (4,978 pupils), where the requirements were slightly greater. As before, no myopia was discovered in the six highest forms, but the percentage in the three lowest was:

III	II	I
3	4	10

Among 834 pupils in young women's academies these were the proportions:

VIII	VII	VI	V	IV	III	II	I
1	2	7	8	6	16	12	19

The Friedrich's Gymnasium in Berlin (722 scholars) furnished this picture:

IX	VIII	VII	VI	V	IV	III	II	I
13	20	16	22	33	48	46	56	61

Of eleven thousand boy cadets of the Prussian army, twenty-five per cent. were found, on examination, to have all the grades of myopia.

As we know, American children furnish a better record, but I doubt whether the pupils of some of our schools are far behind the Vaterland in this particular.

Ellis examined two English primary schools. In one, with two hundred and fifty-five pupils, he found twenty-four per cent. of myopia; in another, eleven per cent. were myopic.

From France, Switzerland, and Russia comes the same story—the more prolonged the study hours and closer the work the more marked the eye defects when maturity is reached.

Another important fact in this connection is that children of myopic parents are much more likely to be shortsighted than are offspring of farsighted or emmetropic (normal-sighted) fathers and mothers. Still another and more ominous discovery made during the investigations I have just referred to is that the myopia in children of shortsighted parents is very prone to become excessive; hereditary myopia is the variety that furnishes the largest percentage of weak and useless eyes. These facts led Erismann to exclaim: "After a few generations every inhabitant of a European city will be a myope."

And so these figures might be multiplied indefinitely, warning us, in no uncertain tones, that as we increase the working hours of early school life we surely and inevitably increase the percentage of shortsighted and eye-strained scholars of later years; warning us that, so far as regards myopia, at least, the defective eyesight of the mothers and fathers will descend with increased emphasis even to the third and fourth generation of those who injudiciously employ their farsighted eyes in gazing too early, too often, and too long upon minute and near objects.

The moral of my tale, so far as the kindergarten is concerned, may easily be drawn. I had a conversation in Heidelberg, a few years ago, with a distinguished Swiss ophthalmologist, himself an authority on this very subject, regarding the alarming prevalence of myopia in Europe. I said we were freer from it in America. "Just wait," said he, "until you have a few generations of kindergarten graduates, and until your boys and girls remain at school and college as long as ours do." I am, of course, waiting, but with a belief that school hygiene will yet prevail over this enemy of our national eyesight; and if you will permit me I shall briefly indicate the hygienic precautions that I would suggest to those of you who are especially interested in kindergarten work.

I repeat that my message is especially to kindergartners, because, as I have already endeavored to show, the beginnings of damaged eyesight are laid in the early years of school life; the prevention of the evil concerns chiefly, therefore, the kindergartner and the teachers in the lower forms, for the trouble is often past remedy when the pupil enters the high grades.

With this proviso, I would respectfully make the following suggestions:

1. Every kindergarten and every school should be provided with certain well-known and simple tests of vision, and no child of any age should receive instruction who has not good eyesight.

2. It should be a part of the teacher's duty—in the public schools and in some private institutions the teacher is the only guardian (in any sense) that the child possesses—to note any defects of vision and have them corrected, if possible.

3. No child with uncorrected or incorrigible defects should be allowed to use his eyes for any kind of close work before he is eight or nine years of age, lest worse things befall.

4. In the kindergarten the children should be taught only those things that demand the minimum employment of the accommodation for near work. Froebel's "gifts" are sufficiently numerous and varied to enable both teacher and children to pass happy and profitable hours without damaging the precious inheritance of vision, and without inflicting defective eyes upon generations yet unborn.

5. Some kinds of instruction are in their nature unsuited for infants' eyes. I admire the work and teachings of such well-known authorities as Kate Douglas Wiggin and Nora Archibald Smith, and agree with them in many of their contentions. For example, I feel, with them, that it is questionable whether "children naturally incline to large movements in drawing," and that "they instinctively make pretty figures." I would certainly not allow them to engage in any kind of drawing, because the tendency always is, as with the grown-up folk, to indulge more and more in elaborate designs.

6. If one turns to the plates in the back of Josephine Jarvis's translation of Frederick Froebel's *Spiel und die Spielgegenstände der Kinder*, or to the elaborate designs affixed to many similar text-books on kindergarten study (Mrs. Rowland Hill's *Brush Work for the Kindergarten*, for example), it will not be difficult to eliminate those occupations and studies that are palpably inimical to the eyesight of the child.

7. Speaking broadly, Froebel's first four "gifts," and the uses to which they are ordinarily put in the kindergarten, and the occupations to which they may give rise, are mostly devoid of harm, so far as the eyes are concerned. They also suggest many *Mutter-* and *Koselieder,* the use of which in kindergarten work is so much to be commended and leaves so little to be criticised that I sometimes ask myself whether with balls and blocks and the accompaniment of song and play kindergarten children might not be made to undergo a healthier development than that which the more complex and elaborate occupations subserve.

8. Above all do I deprecate certain occupations commonly recommended by and pictured in most of the latest kindergarten text-books. These are perforating cards, embossing, fine sewing, drawing in all its forms and phases, most kinds of paper interlacing, intricate paper cutting and folding, peas work, clay modeling, chain making (except where the links are very large), bead stringing, etc. These practices, however little indulged in, are almost certain to damage the eyesight of kindergarten children.

9. Among the less hurtful occupations—some of them harmless—are games not involving near work to any extent, slat interlacing (with wide slats of well-contrasted colors), sand work (especially if indulged in as German children use it—out of doors), gardening, that Froebel loved so well, building with large blocks, and the occasional use of simple apparatus, like Putnam's "busy work tiles."

My plea, therefore, is for work that one connects with a real garden—a genuine child's garden. This would be particularly appropriate in the case of American children, who, living in our stimulating climate and in our stirring times, need to have their physical well-being above all things considered. Plenty of air and sunshine, a minimum of instruction, a maximum of natural enjoyment—these I would have in every kindergarten. The lessons that children love to learn from real plants and some animals and many products of the animal, vegetable, and mineral worlds—all these I would teach from samples kept in stock. But the use of the eyes upon fine work of any kind, as well as their employment for more than a few minutes' duration upon any sort of near occupation, I would absolutely forbid. These sanitary precautions may not mirror the letter of Froebel's teachings, but in my opinion they reflect the spirit of the master. After all, in his own words:

"Was kann lieblicher sein
Als des Kindes kindliches Spiel?"

HYSTERICAL, OR FUNCTIONAL, BLINDNESS.*

By ALVIN A. HUBBELL, M. D.,
BUFFALO,
PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE MEDICAL DEPARTMENT OF NIAGARA UNIVERSITY.

Cases are rare in which complete loss of vision takes place in one or both eyes without there being present fundus changes or lesions of the optic nerve or brain to account for it, and in which, after several days or weeks, the vision begins to return and is finally restored. I am therefore led to report the following cases which have recently come under my observation.

Case I.—Miss J. H., daughter of a physician, is a young woman eighteen years of age, who usually has good health, and is quiet in her manner and not emotional. Two years ago she had "malarial fever," but fully recovered from it. The menstrual functions are normal and regular, and there is no evidence of uterine derangement. She has never had convulsions or any nervous disturbances suggesting hysteria.

On March 9, 1897, she was seized with pain in the left eye, which extended over the left side of the head and into the left ear. This was so severe as to require anodynes for its relief. In three days it had nearly disappeared. The vision of this eye began to be affected soon after the onset of the pain, and was very "foggy" the next day, March 10th. On the morning of the third day, March 11th, when she awoke she found that the vision of this eye was lost, not being able to distinguish even light with certainty. Her father took her to an ophthalmic practitioner in a neighboring town for consultation, and was given the opinion that it was a case of retinal thrombosis. A line of treatment was marked out and followed for a few days without improvement. The father's anxiety became so great that he determined to seek further advice, and on March 16th brought his daughter to me.

Examination of the eyes externally showed them to be alike in appearance and their movements normal. The pupils were of normal and equal size, but the reaction to light was a little slower and less complete in the left eye than in the right, there being a slight dilatation when exposed alone. There was manifest hypermetropia of 0.50 D. of the right eye and vision was $\frac{5}{4}$ Snellen's test-types. The vision of the left eye seemed entirely lost. There was perhaps a slight perception of strong light at the extreme temporal part of the visual field, but of this the patient was not quite certain. Ophthalmoscopic examination through the undilated pupils did not show anything abnormal in either eye. To insure a more thorough inspection of the left eye the pupil was dilated with homatropine solution. A most careful search was then made for some pathological change in the fundus, but not the slightest could be found. There was no obstruction in the retinal circulation or change in the vessels, no œdema, discoloration, or hæmorrhage of the retina, and no changes of the optic disc. The retinal vein at the disc could even be seen to pulsate. Tension was normal. The patient complained of a "weakness" of the eye and some headache, and general weakness. I ventured the opinion that the case was one of so-called functional blindness. The father then informed me of the diagnosis of the colleague who had preceded me in the case. There being so much difference between us in regard to the diagnosis, I suggested that still another opinion be obtained. On the next day, March 17th, my friend, Dr. F. W. Abbott, kindly examined the case most carefully, and he, too, was unable to find anything, objectively, to account for the loss of vision. To him the fundus was entirely normal in every respect, except, perhaps, a slight engorgement of the retinal veins.

Dr. Abbott suggested that a leech be applied to the left temple and the patient kept quiet in a darkened room for a few days. His suggestion was followed, and the patient was also given five grains of iodide of potassium three times a day, and later there was added one sixtieth of a grain of strychnine three times a day.

On March 19th there was distinct perception of light, and she could see the movements of my hand.

20th.—She counted fingers held in the peripheral part of the visual field with difficulty.

22d.—She counted fingers readily when held peripherally in the visual field. Left the darkened room and simply kept the eye covered.

23d.—I began to apply to the eye the interrupted galvanic current of electricity for three to five minutes once a day.

28th.—She read No. 60 Snellen at one metre ($\frac{1}{60}$), but only by looking to one side of it.

April 3d.—She was able to read No. 60 Snellen at five metres ($\frac{5}{60}$), viewing the letters eccentrically. I examined the eye again with the ophthalmoscope, but the fundus was normal, as before. She returned to her home in the country, where essentially the same treatment was to be continued.

15th.—Came to my office again, and I found that vision had increased to Snellen No. 9 at five metres ($\frac{5}{9}$), and Jaeger No. 6 slowly at ten inches.

From that time the vision has gradually improved, until she is now able to read No. 1 Jaeger, but with some effort. The large type seems more or less confused, and she says the "vision is very weak." Still further improvement will undoubtedly take place.

Although the vision for objects has become so nearly restored, the color sense is very much impaired. I have not been able to test this, but her father writes me that "she can not distinguish colors. Red is black to her."

Another interesting accompaniment of the visual symptoms is the loss of function of the corresponding lacrymal gland. On one or two occasions, when feeling badly, she has cried. The tears would trickle down the right cheek freely, but there was no lacrymation of the left eye. This, to me, is additional evidence of the functional character of the blindness.

Case II.—Mrs. S. has been a patient of mine for years. She is fifty years old, is the mother of several children, and has usually been in good health. She has passed the menopause without special disturbances, and has lately increased considerably in weight. She has hypermetropia 1.75 D. in each eye, the correction of which has given her normal vision—Snellen No. 5 at five metres ($\frac{5}{5}$)—and the correction of the presbyopia with + 4.50 D. has enabled her to read Jaeger No. 1 at fourteen inches.

On March 16th, after suffering for a few days from a "cold," the vision of the left eye began to fail, and in three days she was unable to see objects. Not getting better, after using some domestic treatment, she consulted me on April 3d. I found the vision of this eye was a little more than perception of light, but not sufficient to distinguish fingers or large objects distinctly. The external appearances of the eye were normal, and the pupil was of the same size as that of the other, and reacted as well to light. After dilating the pupil with a solution of homatropine, I was unable to find any pathological changes whatever in the fundus of the eye. No lesions elsewhere were apparent, and there was no hemianæsthesia.

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* Read before the American Ophthalmological Society, Washington, D. C., May 6, 1897.

I made the diagnosis here also of functional blindness and ordered small doses (five grains) of iodide of potassium to be taken three times a day.

On April 15th vision had risen to Snellen No. 15 at five metres ($\frac{5}{15}$), and at the present time (May 24th) it is $\frac{5}{5}$ nearly.

Case III.—Mrs. C., thirty years old, is rather slight in stature, is not strong and robust, and is of an active, "nervous" temperament. Eight years ago she gave birth to a son, and has since had some slight uterine displacement. She came in February last to Dansville, N. Y., from New York city, to visit her husband, who was at the sanatorium for treatment. Before leaving home she had been working unusually hard by reason of some extra household duties that had come upon her, and was therefore much fatigued. A few days after her arrival, on February 19th, at about 5 p. m., while preparing her toilet for supper, she suddenly became dizzy. She started for the bed, but had taken but a step or two when she fell, striking the back of her head against the iron-bound edge of a large trunk. Shortly before six o'clock she was discovered. She says she remembers falling, but does not know how long she lay on the floor. It is estimated that it was twenty to forty minutes before she became conscious and assistance reached her. She was put to bed, simple restoratives were administered, and she was soon quite comfortable. She noticed a book lying on the foot of the bed and, feeling so well, she thought she would read a little. As she rose up and leaned forward to reach it, she was seized with a "sudden and severe rush of blood to the head," as she described it. Dr. Gregory, of the sanatorium staff, was called, and she was soon made comfortable and remained so until about nine o'clock, when she was taken with severe pain in the head, this being worse in the occipital region, and accompanied by a sense of great pressure. To her it was like "a cataract flowing copiously down the back of the head and brain." The pain was so intense that it was controlled only by the hypodermic use of morphine. During the night she became delirious at times, and she began to have "cramps," which affected, more or less, the whole body. Dr. Gregory characterized them as "cataleptic" in nature. These seizures were frequent, and lasted from "two to ten minutes." The pain, delirium, and convulsions began to diminish after two or three days, and had quite disappeared at the end of ten days. Nausea and vomiting were also frequent during this period. There were no emotional symptoms, no *globus hystericus*, no hemianæsthesia. At no time previous to the fall had she had convulsions, dizziness, or "falling sickness."

On February 20th, the next day after the fall, Mrs. C. began to complain of dimness of vision in both eyes, and within twenty-four hours afterward she was unable to distinguish even light with either eye. At first she said there was a sense of "glare," and this gradually changed to total darkness or blackness. The expression of her face was the vacant stare of any blind person. At times her eyes pained her considerably, but were never reddened or watery.

During the first two weeks she was thoroughly examined for fracture of the skull and lesions of the brain, but none could be found.

The vision not returning, while in other respects the patient had nearly recovered, I was called to see her on March 5th, just two weeks after the fall. She was then quite free from pain, and there had been no convulsions, delirium, or vomiting for several days. She was somewhat weak and still kept her bed. There were no symptoms of anæsthesia or paralysis of any part, and the hearing and other senses, except vision, were very acute. Careful search made negative any lesion of the brain whatsoever—contusion, hæmorrhage, or compression. The injury at the back of the head had been so slight as scarcely to produce an abrasion.

The only abnormal conditions apparent at this time were the general physical weakness and the loss of vision, which was complete. I could not elicit any evidence of the slightest perception of the strongest light. The external appearances of the eyes were normal, and the movements of the balls and lids were unrestricted. The pupils were of equal and ordinary size and reacted quickly and fully to light.

To facilitate the ophthalmoscopic examination I used a mydriatic, and after dilatation of the pupils made a most careful examination of both fundi. No abnormal appearance of any kind could be found in either the optic discs, retinal vessels, retinæ, or other structures. The picture of the parts was one of perfect health and function.

The case appeared to me to be one of functional or hysterical blindness, and in this light I was able to give a favorable prognosis.

The treatment was directed toward the general improvement of the patient and the use of electricity. She gradually gained in strength, but her vision did not change till the fifth week after the injury. On March 24th she thought there was more light in her room. On March 26th she could distinguish large objects, and on March 27th she could recognize faces. It was on this date that I visited her the second time, and I have not seen her since. But on April 23d she wrote me that the vision quite fully returned in both eyes shortly after my last visit, and that she was now able to see as well as ever, except that her eyes were "weak."

I submit these cases as belonging to that extraordinary class known as functional, or hysterical. When the pathologist will give us an acceptable explanation of hysterical anæsthesia of areas of the skin or of hysterical palsies of certain muscles, then we, by analogy perhaps, may offer some *rationale* of the blindness in such cases as I have related. At present we are entirely in the realm of unsubstantiated theory, and I refrain from speculation.

A CASE OF ANTHRAX.

EXCISION. RECOVERY.

By CHARLES E. NAMMACK, M.D.,
VISITING PHYSICIAN, GOUVERNEUR HOSPITAL, NEW YORK.

On Saturday, March 20, 1897, Thomas S., twenty-nine years old, fruit handler by occupation, felt a slight prickling or burning sensation in the right eyebrow and upper lid, followed on Sunday by some swelling of the lid. He consulted a neighboring surgeon and was ordered a lotion. As this eye had six years previously been the seat of an operation for cataract, he feared a recurrence of some internal eye trouble, and went to an eye clinic on Monday morning. Here he was informed that the eye was all right, but that he had cellulitis of the lid, and was referred to the surgical class and again given a lotion. The swelling continued to increase in size, however, and on Tuesday morning he called at my down-town office. The lid then presented the ordinary appearances of a phlegmonous cellulitis, and he was ordered hot boric-acid lotions and told to return next day for incision, when evidences of pus formation were confidently expected. On Wednesday a messenger called to say that he was delirious, and that a black pimple had developed during the night, which had broken and discharged bloody fluid. He was immediately visited at his home, and found to be in high fever (104.8°), with delirium, feeble pulse, and sweating. The local œdema had extended until it now entirely covered both orbital and frontal regions, simulating the deformity of the fœtal face in brow presentations. The characteristic papule, with its black central crust surrounded by spreading vesicles and extensive brawny œdema, was there, and it was evident that the dreaded malignant pustule would soon end his life unless prompt measures were adopted. He was accordingly conveyed at once to Gouverneur Hospital, and my colleague, Dr. John F. Erdmann, the visiting surgeon, was summoned by telephone. Dr. Erdmann promptly excised the area surrounding the charbon, cauterized all the raw edges with the platinum cautery, swabbed out with pure carbolic acid, and then inoculated with cultures of the *Bacillus pyocyaneus.* Free incisions were made into the eyelid, and these incisions similarly treated. Local anæsthesia by cocaine was secured before operating. Renewals of the carbolized dressings were ordered every two hours, and the liberal administration of milk, whisky, and strychnine. The next day the patient's temperature was 101°, and the delirium much less marked. His subsequent recovery was uneventful. Parts of the excised tissues were sent to the Carnegie Laboratory, to the Board of Health Laboratory, and to the New York Hospital Pathological Laboratory. Dr. William H. Park, of the health department, reported that cultures made from the tissues gave a moderate number of colonies of anthrax bacilli and a large number of cocci—probably *Staphylococcus pyogenes aureus.* The anthrax bacilli proved virulent. A mouse died in thirty-six hours after injection of one loopful under the skin.

The interesting features of this case are two—viz., the first, the length of time after the reception of the poison before the development of the characteristic malignant pustule, during which time three observers had treated the case as one of ordinary phlegmonous cellulitis; second, the energetic and successful treatment after the development of profound constitutional symptoms.

G. Blumer and H. H. Young * give a very complete account of a fatal case of anthrax septicæmia, due to scratching the right eye with the hand after the subject had been working with South American hair, and state that when the infection occurs in the region of the orbit, the serious œdematous form of the disease is apt to follow. In their case autopsy revealed anthrax endocarditis, anthrax peritonitis, and intestinal lesions.

Treves * states that under free excision, followed by cauterization, the majority of cases end rapidly in recovery, Langyel and Moranyi having lost only thirteen out of a hundred and forty-two patients thus treated.

H. L. Browne † reports a case in which careful inquiries failed to elicit any possible source of infection, and the patient recovered without excision; but J. D. Mortimer ‡ considers that to do otherwise than to excise is running a dangerous risk.

C. R. Illingworth # denounces Mortimer's treatment as barbarous and totally uncalled for, and says that germicides locally applied will be quite sufficient to effect a cure. Illingworth is supported by A. Anderson,‖ who has cured four cases by applying liquid carbolic acid.

The disease would seem to be sufficiently frequent in England among wool sorters to require repeated action by the House of Commons looking to the protection of factory operatives, as well as to furnish ground for emphatic differences of opinion between British practitioners. In this country cases are rare, except, perhaps, in California, where C. L. Bard ^ has written a paper descriptive of the ravages of *Bacillus anthracis.* Bard states that in Ventura County alone a hundred cases of malignant pustule have occurred from the time of its first recognition to the date of his article, and pertinently suggests that some deaths, happening in remote localities, where the diagnosis may have been obscure, may have been due to it.

Notwithstanding the infrequent opportunities for observing the disease on this coast, the consensus of opinion among Eastern surgeons would seem to be voiced by Herbert L. Burrell ◊ in the conclusion that, where applicable, complete excision of the pustule is the best treatment, except when vital structures are involved, in which case injection of strong solutions of the most energetic antiseptics may be used.

The possibility of employing antianthracic serum in the treatment of human subjects has been suggested by Marchoux.‡ He believes that such a serum can be prepared, possessing both preventive and curative properties, and that it is by conferring a special activity upon the phagocytes that the power of this serum is exhibited.

The probable mode of infection in the present case is a point of some interest. In most of the cases occurring in New York, in all that the writer had previously seen, the subjects were men engaged in handling hides. The present patient's work consisted in overhauling and

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* *Johns Hopkins Hospital Bulletin*, 1895, vi, 127–132.

* *System of Surgery*, vol. i, p. 314.

† *British Medical Journal*, July 14, 1894, p. 69.

‡ *Ibid.*, August 4, 1894, p. 292.

Ibid., August 25, 1894, p. 456.

‖ *Ibid.*, September 22, 1894, p. 684.

^ *Southern California Practitioner*, 1894, p. 121.

◊ *Annals of Surgery*, 1893, xviii, p. 621.

‡ *Medical Week*, Paris, 1895, iii, p. 537.

repacking fruit sent to a commission house. Some of this fruit came from Valencia, Spain, in crates which were bound with strips of rawhide. On his striking these strips with a cutting adze, a strip would often fly up and strike his face. Another explanation might possibly obtain. The damaged fruit which it was his duty to cast out from the boxes may have been infected by flies, and the infection conveyed from his hands to the face. The well-known tenacity to life of the anthrax bacillus would render either explanation possible, as even catgut, prepared from the submucosa of the intestines of infected sheep, has been known to defy all the elaborate preparation of modern surgical technique, and still convey anthrax infection to a wound.

42 East Twenty-ninth Street.

HYDRÆMIA, HÆMATOMA, SEPSIS, RECOVERY.

By WILLIAM L. STOWELL, M. D.

The following case history presents some points of uncommon occurrence and interest:

The boy, George N., was fourteen years old, of usual stature and activity, but quite spare, so that friends thought he might be tuberculous. No abnormal pulmonary signs have been found. He was very pale, especially after nosebleeds, to which he was subject.

On December 30th, while throwing a snowball, the boy slipped and fell on the pavement, striking on the left buttock. He was a little lame, but made no complaint until January 3d, when he had much pain, tension, and swelling over the left hip. There was redness and no motion. The limb appeared longer than its fellow. The boy was extremely anæmic, but as he had had a violent nosebleed the previous day not much was thought of this symptom. Poultices relieved the pain of the hip, but as the temperature had mounted to 104° it seemed best to open the limb. Professor J. D. Bryant was called in consultation and an opening made half an inch long two inches below the trochanter, where there appeared to be fluctuation. Neither blood nor pus flowed except blood from the cut skin. The wound was bathed with hydrogen peroxide, and aseptic dressings were applied.

A few hours later I was summoned, as the wound was oozing a little thin blood. After again cleansing the wound and applying styptic cotton and tight bandages I left, telling the boy he would be all right. During the night I was again called, as the boy was nearly exsanguinated. The oozing from the edges of the little cut was nearly as thin as water, and little red streaks of red cells could be seen flowing in it. There was not the least attempt at coagulation, nor did the blood have the viscid feel it usually does.

As persulphate of iron and the usual styptics were found valueless, the wound was filled with dry iron powder, a thin piece of wood applied over this and held by rubber adhesive plaster, and the entire lot sealed with collodion.

On the following morning the temperature was 104°, but fell in the afternoon to 101°. During the next twelve days the temperature fluctuated between 101° and 102.5°. There was stupor with sweating, tongue moist some days and dry others; in short, the boy was in a somewhat septic state.

For fear the patient would "ooze to death," not to say bleed, the dressing was left untouched for a week. When it was removed a very little thick blood flowed out. It was now certain that the tumor had been caused by a hæmorrhage into the soft tissues. The pain and temperature led to the diagnosis of suppuration, but no pus really appeared until February 1st. From that time more or less pus came with the softening blood, sometimes one predominating and sometimes the other. On February 7th the patient was sitting up and feeling well. On February 20th the discharge ceased, he had a chill, and his temperature was 104.5°. A new swelling had been forming in the middle of the thigh for many days. After a week of high temperature this made an opening, and bloody fluid escaped as in the primary hæmatoma. The temperature fell nearly to normal. The reason for the last hæmatoma was not apparent. There was no known injury, and the slow development and final breaking down were not like those of an ordinary cellulitis.

The treatment was symptomatic and nutritive. When the temperature was 103° or more, acetanilide was given in doses of three grains. The boy said it made him feel good, and he always could distinguish it from other powders administered for sleeplessness. Albuminate of iron was given to improve the character of the blood cells, but as improvement was not marked, and as there was evidently a great lack of blood-cells as well as hæmoglobin, he was given hæmaboloids, a preparation of nucleo-albumins and bone marrow. Theoretically, this was just what he needed. Practically, he gained in color, weight, and good spirits. The use of this preparation was continued several weeks, and supplemented the beef and eggs which he was urged to eat. During March he grew stronger, and by the middle of May returned to school having his usual weight and color, though the knee remained slightly stiff and the thigh weak.

The history shows interesting features as follows: The boy was "a bleeder," had a hæmorrhagic diathesis. Whether his extreme anæmia was due to improper and incomplete formation of blood-cells, or whether substances were evolved, perhaps in the intestines, with hæmatolytic properties, the blood was far from containing the normal five million corpuscles in the cubic millimetre.

There was no pus—*i. e.*, no white cells—until he had been treated four weeks.

The joint that seemed to be the seat of tuberculous inflammation recovered entirely, even in a boy who was thought to have tuberculous tendencies.

A diagnosis sometimes has to be revised, and patients do recover when everybody concerned believes death certain.

28 West Thirty-sixth Street.

The American Association of Obstetricians and Gynæcologists will hold its tenth annual meeting at the Cataract House, Niagara Falls, on Tuesday, Wednesday, Thursday, and Friday, August 17, 18, 19, and 20, 1897, under the presidency of Dr. James F. W. Ross, of Toronto. The railways have granted reduced fares on the certificate plan to all who attend the meeting, and the Cataract House has made a reduction from its regular tariff of charges.

THE INFLUENCE OF CLIMATE IN NERVOUS DISEASES.*

By SANGER BROWN, M.D.,
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By the term climate is understood certain conditions of temperature, weight, moisture, and movement of the atmosphere, together with the presence in it of such substances as iodine, ozone, and balsam, which are more or less predominant in certain portions of the earth's surface. Variations in these conditions produce a corresponding variation more or less pronounced and uniform upon the functions of animal life.

Some consideration of the factors which have to be reckoned with when the effect of climate upon the bodily functions is estimated logically precedes a discussion of its influence in nervous disorders. The effect of passing from a cool to a hot climate has been pretty thoroughly studied by British physicians, who, on account of the troops and civilians exchanging a residence in England for one in India, have been afforded peculiarly favorable opportunities for investigation. There is a reduction in the respirations from 16 to 13, or even less, accompanied, however, by a slight spirometric increase; this spirometric increase, though, does not compensate for the diminished number of respirations, as the respiratory function undergoes a reduction amounting to nearly nineteen per cent. The lungs of Europeans in India are lighter after death than the European standard—that is, they contain a larger proportion of air and a smaller one of blood. The digestive powers are reduced, the craving for animal food diminished, the nervous system is depressed, and especially so if great humidity is combined with great heat. Great heat in a dry atmosphere is well borne for a time, but if it is protracted, an impairment of nervous energy results, accompanied by a corresponding lowering of the functions of digestion, respiration, and assimilation, and signs of premature age make their appearance. It is only necessary to mention heat stroke in this connection.

The effect of extreme cold upon the nervous system, as observed by Arctic explorers, is highly interesting, but not of great practical importance from a climatological standpoint. However, it is a matter of common observation that a dry, cold atmosphere has an invigorating effect upon the nervous system, and consequently upon the system generally.

A considerable diurnal change of temperature is invigorating to the nervous system, provided the upward curve does not range too high. In New Mexico, Arizona, and Colorado would be found almost any degree of daily fluctuation desired. It is well known that many people of unstable nervous equilibrium, whether such instability be temperamental, or whether it be developed by such a natural crisis as puberty or the menopause, or whether it be the result of overtaxing the nervous system, or due to the debilitating effects of such a disease as consumption, present signs of marked nervous disturbance when they pass from a low to a high altitude. Some of the more prominent symptoms are general restlessness, an anxious expression, insomnia, and tinnitus. My personal experience and observation are limited to a few months' residence in El Paso, with an altitude of three thousand feet, and Santa Fé, with an altitude of seven thousand feet. At the former place I saw no cases of this kind, while at the latter they were comparatively frequent. Some of the severest cases were presented by tourists who had planned to spend a few days or weeks at the hotel, but who were reluctantly compelled to cut their visits short and seek a lower altitude. I believe it is almost wholly on account of these nervous disturbances that so many patients with tuberculosis, in the earlier stages at least, do not do well when sent directly from a low to a very high altitude. The symptoms would appear to be more probably due to some stimulating properties in the air than to a diminution of pressure, inasmuch as almost identical though much less frequent and less pronounced effects ensue when an inland dweller goes to the seashore.

While the effect produced on the nervous system by too rapidly reduced atmospheric pressure, when it had been increased three or four atmospheres, as is done in caissons, is of great importance, it has no application here, neither do the symptoms presented by those who take a very high balloon ascension.

A dry, cold, sunny climate, not too windy, and with an altitude not above three thousand feet, is the one best suited to the restoration of a debilitated nervous system, no matter hardly to what cause this may be due. If proper precautions are taken in regard to the clothing, and the kidneys are sound, a very frail, nervous invalid may spend many hours daily in the open air, even in a cold winter climate, with manifest advantage. If the cough was not thereby aggravated, I believe many cases of phthisis would be best treated along these lines, for more can be accomplished in arresting the disease by raising the functions of the nervous system to a high point than in any other way; though, of course, I do not deny the beneficial influence of an atmosphere in which putrefaction can not take place. When it is remembered what a sharp decline there has been in the mortality from consumption in the various armies since the ventilation of barracks has been attended to, it may be maintained that the prevalence of this disease among the inhabitants of certain cold countries is mainly due to their spending months together in filthy huts without ventilation, and not to the low temperature. It should be remembered that the inhabitants of New Mexico, who are comparatively free from this disease, live almost entirely in the open air.

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* Read before the American Climatological Association at its fourteenth annual meeting.

There is much to be said, I think, in support of the position that nearly all diseases which are benefited by climate owe the improvement largely, if not mainly, to the effect produced upon the nervous system. It is not maintained that climate has a direct influence on any of the organic nervous diseases, nor yet upon such functional diseases as paralysis agitans or epilepsy. It is really only certain forms of functional nervous diseases that demand attention in this connection, particularly those forms of functional disorder which come to those who overtax themselves in trying to bear the burdens and stand the strains incident to a civilization with rapidly increasing complications and responsibilities. It is manifestly upon the upper strata of the middle classes and the higher classes that these burdens of responsibility mainly rest; they furnish a large proportion of the more serious or severe cases of these forms of disease, and they, too, are usually able to afford the means necessary to properly test the effect of a change of climate. Some of the principal symptoms of these cases are insomnia, mental depression, irritability, emotional disturbance, inability to sustain mental effort, neuralgia, headache, vertigo, dyspepsia, and constipation. Though there are undoubtedly marked individual differences in the original strength of the nervous system, the cause of the trouble in these cases may be regarded as extrinsic, while the familiar nervous manifestations appearing at the period of puberty and the menopause may be regarded as intrinsic.

Benefits derived from a temporary change of climate are due:

1. To incidental influences, such as relief from responsibility, change of scene, an outdoor life, and regular habits.

2. To the influence of the climate in the promotion of the general health.

3. To the direct effect of the climate upon the disease itself, as the healing influence upon the lungs popularly attributed to inhalation of the atmosphere of certain districts.

1 and 2 are of much more importance than 3, even in pulmonary tuberculosis, for unless they act the disease invariably progresses.

In functional nervous diseases, referred to above as extrinsic, more than in any other, perhaps, are influences incidental to a change of climate important. Cares and responsibilities are left behind, the mind is diverted by a change of scene, there is likely to be some change in the diet, the habits are regular, and there is an outdoor life.

That the influence of climate in the promotion of the general health is of the utmost importance in all diseases susceptible to benefit from climatic treatment needs no argument.

While it is not pretended that the direct influence of climate in nervous disease is by any means as great as the healing effect upon the lungs popularly attributed to inhalation of the atmosphere of certain districts, yet even in cases of incipient pulmonary tuberculosis, the condition in which the direct effect of climate sometimes produces its most brilliant results, if the patient does not take kindly to the incidentals, such as separation from friends and previous modes of life—in short, if there is much antagonism from the nervous system, he will almost certainly grow worse, inhalation of salubrious air notwithstanding.

I have said that various forms of functional nervous disorder were sometimes made worse by sea air, but this aggravation is much less frequently seen here than in high altitudes; indeed, a large majority of nervous invalids do well at the seaside, and if, at first, the air is too stimulating, later they may be greatly benefited by it. Even a sea voyage or a sojourn in a high altitude may be productive of the best results.

In all cases where recuperative power is greatly impaired either by age or disease, caution has to be observed in sending the patient to a cold climate; but I am strongly of the opinion that many patients suffering from nervous disorder such as I have described are sent to a warm climate who would do much better in a cold one.

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THE CLINICAL SIGNIFICANCE OF THE DISCHARGES IN INFANTILE DIARRHŒA.*

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THE subject of infantile diarrhœas is too extensive and would require more time for consideration than the scope of this paper allows. Leaving aside, therefore, the larger questions of ætiology, bacteriology, pathology, and the various modes of treatment, including the very important subject of hygiene, as well as the general symptomatology, I shall only emphasize what appears to me to be the most important clinical feature of the bowel troubles of infancy, and endeavor to arrive at proper indications for their treatment rather than to discuss it.

The revolution that the past sixteen years has brought about in medicine has largely changed the whole aspect of the science. Empiricism is rapidly giving place to rationalism in the treatment of disease. The routine prescriber is being superseded. Empirical medicine and routine treatment are no longer recognized as science. They were little better perhaps than drug-counter prescribing, or the "good old granny medicine," and were based largely on the same methods of "*trying things*," as they called it, until something was found to cure the case. The "doctor of the old school" had his favorite diarrhœa mixture, cough syrup, headache medicine, and purgative pill, usually of a drastic nature. Each case got the same thing. Environed by hazy speculations concerning infectious molecules and disease particles of matter, it did not occur to him that the same or similar symptoms might represent totally different pathological states. Thus sometimes did he cure, sometimes kill, through ignorance; and the generous public made due allowance.

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The physician is often surrounded by peculiar difficulties in the diagnosis of intestinal troubles. When it is remembered that the disturbance of the equilibrium of any one organ of digestion may and usually does mean disturbance of the functions of all the rest, it is sometimes hard to form an accurate conception of the real condition presented. Unless this is done, treatment can not be intelligently begun. One must be able not only to recognize the prominent symptoms of the local lesion, but also to possess the mental breadth to grasp the whole situation at once, and properly estimate the condition and influence of all other organs and forces that complicate disease with infinite variabilities. When the patient is an infant an accurate history of the facts can not always be obtained from the mother. Close and careful scrutiny, therefore, is necessary in all cases, to arrive at the true state of small children, who are unable to describe their own sensations, helpless, "and with no language but a cry."

The various divisions of the subject of infantile diarrhœas are almost as numerous as the writers on that subject. Each author considers the question from his own standpoint. Many of these classifications have seemed inadequate. Those based on the ætiology provoke an inquiry as to whether our real knowledge of the causes of these disturbances is perfect enough to justify a classification upon ætiological grounds. It has seemed to me, therefore, that since the discharge in these cases is perhaps the most prominent clinical symptom, the consideration of its characteristics would form a nucleus about which a clinical classification might be gathered that would at least be practical. The statements which follow, however, should not be taken without certain limitations, nor should they be divorced from the clinical picture afforded by the general symptomatology, but always considered in connection with it.

This classification, based upon the gross appearances of the stools, recognizes four principal types, under which may be included practically all varieties of the so-called "summer complaint." These are the (*a*) mucous, (*b*) the serous, (*c*) the pasty white, or musty, from its odor, and the dyspeptic; subdivided into (1) acid and (2) alkaline.

(*a*) The mucous stool, whose appearance is familiar to every practitioner, presents a discharge usually small in amount, frequent, and characterized by whitish, ropy mucus of a gelatinous consistence. It may be faintly streaked with blood or stained with fæces. Some authors have attributed the presence of this stool entirely to nervous disturbance of the secretive functions, presided over by Meissner's plexus, in the gut. As a matter of fact, this discharge is frequently associated with the nervous derangements of teething, and is frequently found in the children of families of distinct neurotic tendency. While this may all be true, it is equally true that this stool in a large number of the cases is the result of errors in diet, and where no neurotic tendency can be made out.

The secretive function of children being more active than in adults, the delicate mucosa of the bowel finds itself more susceptible to the influence of local irritants. Oversecretion thus with an abundant outpouring of mucus is easily produced. This mucus may come from the whole alimentary canal, or from any part of it. It is a matter of some importance, too, to be able to locate just what area it does come from.

In dysenteric states, where the colon is affected, the appearances are somewhat different from those described. Instead of mucus streaked with blood, there may be quite a bloody stool, and sometimes a stool known as hæmorrhagic, which consists almost entirely of blood. There are also much tormina and tenesmus, and the pain rapidly exhausts the little patient if it is not relieved.

Should ulceration be present, it may be determined by the occurrence in the discharges of pus and shreds of necrosed mucous membrane, in addition to blood and mucus.

Treatment in each of these stools opens up such a wide and varied field for discussion that it will only be referred to rather than discussed in this paper. If the disturbance is neurotic in origin, with mucous stools, remedies designed to restore normal nervous tone may be employed, good hygiene being of first importance in all cases. If the history points to the presence of local irritants from dietary imprudence, a full dose of laxol, which is a palatable preparation of castor oil, sweeps clean the Augean stable of its offending matters and mucus. Bismuth then in large doses, held in suspension with mucilage of acacia, is valuable for its sedative, mildly astringent, and antiseptic action.

Should a dysenteric state be present, calomel and ipecac, internally, are of value. The more rational mode of treatment, however, would seem to be that of local applications to the diseased part by means of medicated enemata—nitrate-of-silver solutions standing among the most valuable for this purpose. It is also among the best when ulceration is present.

(*b*) *Serous Diarrhœa.*—These stools are represented by copious watery discharges, which hardly stain the napkin. It is termed choleriform diarrhœa, or cholera infantum. Associated with such stools may be severe vomiting, and usually a profound state of collapse. The severe shock under which the little patient labors is ascribed, on the one hand, to heat exhaustion; on the other, to a severe toxæmia from infected food. The clinical picture in either case is the same. The vasomotor system is profoundly depressed, and the abundant flow appears to be caused by the relaxation of the intestinal vessels supplied by the splanchnic nerves. The alimentary canal, as some one has said, presents a condition of millions of minute leaks, through which the young life rapidly drains away, unless the leakage is soon stopped. Whether the appearance presented by a helpless babe, restless, pinched of face, and pallid of countenance, is the result of heat stroke or milk poisoning, the indication is for prompt and decisive action on the part of the attendant. Temporizing here means death to the child. If heat stroke is the cause, the same indications for treatment obtain as in the adult. Whether due to heat or poison, the point to be emphasized is that a dangerous condition confronts us—a disorganized physiological state is present. Unless this aspect of the case is recognized and the depressed state of the nervous system promptly restored to its normal tone, a few hours or a day may leak the reservoir of life so low that death supervenes.

Abdominal counter-irritation is valuable and should not be forgotten. Morphine and atropine, for their stimulating effect, may be used hypodermically in minute doses. Champagne and brandy are valuable. Lavage of the stomach may be employed to check vomiting. Rectal enemata of saline solutions also have their advantage, for by this means lost serum may be restored to the blood, while excessive purging may be allayed by rectal injections of starch water and laudanum.

(*c*) *The Pasty White or Musty Stool.*—This stool is often included by writers on the subject as a form of cholera infantum. The discharge is hardly visible on the napkin, and has the appearance of a paste made of water and chalk. The odor is musty or mousy, and is characteristic of this stool. There is usually a history of having taken indigestible food, or of its having been preceded by one of the other forms of diarrhœa. The general clinical symptoms are not as severe usually as in true cholera infantum, but are not markedly different from those of other diarrhœas.

The stool indicates a complete atony of the glands of digestion. Through the influence of micro-organisms every gland in the alimentary canal appears to be inactive.

Treatment here should be prompt, its object being to restore activity to the glandular functions. No agent is more effective for accomplishing this than the bile itself, for this, with its antiseptic action, is one of its most important natural functions. Podophyllin in one-twentieth-grain doses has been found very valuable in flooding the bowel with bile and bringing to terms the languid glands. As long as this pasty stool continues astringents are contraindicated. They will only lock every gland tighter and tighter. When the stools become bilious, Nature usually accomplishes the rest. If a catarrhal condition should remain, however, then, and not till then, are astringents indicated.

In each of these three phases of diarrhœa it is generally accepted as advisable to withhold all food for a short time. In the mean time thirst may be allayed by barley water, and the child usually does not suffer from want of nourishment for a day or two.

(*d*) In the next class of *dyspeptic* diarrhœa, however, the whole management seems to be a question of artificial feeding rather than the administration of medicine. The trouble may last for months unless proper feeding be employed.

The stools may be divided into two varieties: The first of these is characterized by a discharge leaden in color, acid in reaction, and by the sour, disagreeable odor of fermentation. The second is characterized by a grass-green stool, alkaline in reaction, and of a most foul and offensive odor. Intermixed in the discharges of both the acid leaden and the alkaline green stools may be seen curds of undigested food. The first is tyical of the bacteria of fermentation; the second of the bacteria of decomposition, and the alimentary canal affords a splendid test tube for the cultivation of these organisms.

This disease is one of hot weather, the warmer temperature making the always easily infected milk still more congenial to the growth of the bacteria, which get into it through unclean nursing bottles, contaminated nipples, and in many other ways.

The first indication is, of course, to free the bowel as completely as possible of its offending contents. This may be done by a full dose of laxol. The adjustment of a suitable diet may then be considered. This is frequently a matter of much difficulty. Escherich, who has made much research in this field, advises, in the acid-fermented stool, the withdrawal of all carbohydrate foods, milk, etc., and the administration of beef juice, albumin water, and meat broths. If, on the other hand, the green alkaline stool is present, these foods should be prohibited, and carbohydrates given. It is often necessary, however, to exclude either one or the other class entirely, or practically so, from the diet, in order for it to succeed. It is hard to find a food product which will do this.

I do not propose here to enter into the question of infant feeding. That is a large subject in itself. There is, however, a food I wish to mention in connection with this subject. It is, no doubt, familiar to all the members of this society, and is known as the modified milk from the Walker Gordon laboratories. Milk is the natural food for all the mammalia in the early period of their existence. The percentages of the various constituents vary, however, in different animals, the average amount of albuminoids in cows' milk being four per cent., as compared with two per cent. in the human female. This, with other reasons, makes it necessary to dilute cows' milk when it is being given to children. Now, in these dyspeptic diarrhœas of children the digestion frequently becomes so impaired and so sensitive that not even the two per cent. of albuminoids in mothers' milk can be retained. Otherwise the milk, if it is good, presents just those constituents needed by the infant. These laboratories have solved the problem of furnishing not only pure milk but milk of any percentage of the various constituents desired, so that the individual needs of each case can be met.

The two cases which follow illustrate not only the frequent irritability of the little stomachs of children, but also the value of the food treatment mentioned.

Case I.—Fine, fat, healthy boy of five months and a half of age, had been fed from birth artificially, and was now on Mellin's food. During a spell of excessively hot weather the bowels became loose, the discharge being of a mucous nature, with undigested food particles. The mother put him on diluted cows' milk and stopped Mellin's food. This disagreed. Albumin water was ordered. The stools then became green and alkaline, with offensive odor. Several intestinal antiseptics were tested, but with no improvement worth noting. Bismuth, while the stools were mucoid, turned them darker in color, but was of only temporary benefit. Imperial granum, of which I had a sample, was given the boy, but the little rebel refused to take it after the first feeding. He was losing weight, and had become cross and fretful, where he had formerly been of a good temper. Intestinal antisepsis seemed to fail. The stools continued green and offensive. Finally, I induced the mother to give the modified milk a trial.

Having arrived at the conclusion that it was the casein or albuminoid constituents of the milk that were indigestible, I ordered the following percentages: Fats, three per cent.; albuminoids, 1.5 per cent.; sugars, five per cent.; salts, 0.5 per cent.; limewater, one sixth. On the second day after beginning this diet improvement was noted, and continued uninterruptedly till the child was well. About a month later the percentages of average mothers' milk were ordered. While this order was waiting to be filled the pasty white stool made its appearance for a day, but a dose or two of podophyllin promptly flushed the bowel with bile, and no further trouble was experienced. After a while the percentages of mothers' milk were discarded for Horlick's, and the baby is to-day one of the finest, fattest little fellows in the city.

Case II.—The baby, a vigorous, well-formed male infant, was born February, 1895. Its weight one hour after birth was nine pounds four ounces. Nursing was not commenced till the third day. The mother was a healthy young woman of about twenty-five years of age. Almost immediately following nursing the infant was seized with colic. Diarrhœa of a moderate form, with curds and mucus, soon developed. All attempts to improve the mother's milk, after twelve days' trial, having failed, nursing was discontinued. Diluted cows' milk with a small amount of sugar added was fed to the child. Constipation and colic followed the diarrhœa. Glycerin enemata brought forth scybalous masses. Modified milk was then ordered as follows: Fats, two per cent.; albuminoids, one per cent.; sugar, six per cent.; limewater, a twentieth. Not much improvement was noted. At the request of the parents Horlick's milk was then allowed. The colic ceased, but the diarrhœa returned. The baby, now six weeks old, weighed five ounces less than at birth, and looked old, tired, and pinched. Modified milk was again ordered, containing only 0.5 per cent. of albuminoids. Constipation and colic again supervened. All the casein taken seemed to be undigested. The child gained, however, in weight eight ounces in one week. Peptonizing the milk was of no avail. There seemed an absolute inability to tolerate the albuminoids at all. Not until the casein was reduced to 0.2 per cent. did the symptoms subside. Then the boy began to grow, and was well and happy, although undigested albuminoids frequently appeared in the stools. It was now thought advisable to raise the albuminoids to one per cent. Immediately the old constipation and colic reappeared, and the former percentages had to be adopted. Not until after he was three months and a half old was he able to stand more than one per cent. of albuminoids. An increase of one fourth per cent. would at once produce restlessness and constipation.

Milk is admittedly the most perfect food for infants. It is Nature's own product for that purpose. When, however, the little one's digestion becomes so impaired that even Nature's food offends, the fact that the offending constituent of the milk, whatever it may be, can be reduced to a minimum by an artificial process marks an advance in the subject of infant feeding. By this means Nature may be made to fit the individual, instead of individual conformity to Nature.

It is a matter of vital importance in these diarrhœas that the differences between them be clearly drawn, and that an accurate conception of the condition present in each be gained. Routine or random prescriptions here will not do. Whether the stool is mucous, serous, pasty white, or dyspeptic, unless the physiological aspect of each case is considered in connection with the causes, we are working in the dark. It is necessary for the attendant to have clearly in his mind what he wishes to do and why he wishes to do it, if he would succeed in the accomplishment of his purpose.

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SOME
STATISTICS ON BLINDNESS AND DEAFNESS,
WITH A COMPARISON OF THE INCONVENIENCES OF EACH.

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I have been prompted to present this rather unusual subject for several reasons: First, because it is one on which there seems to have been very little expenditure of thought and investigation; second, because the great majority of people, being unable to make a just comparison of the two infirmities, are apt to sympathize too much with the blind and too little with the deaf; and lastly, because I desire to disseminate a more correct and extended knowledge of deaf-mutism and its effects upon the mental and physical development of an individual.

For many of the ideas set forth in this paper I am indebted to the writings of Dr. Samuel G. Howe, of Boston, to Maurice de la Sizeranne, of Paris, and to the superintendents of various deaf and dumb and blind institutions, both in this country and in Europe, with whom I have had a more or less extended correspondence on the subject.

I find such a contrast in the statistics of different authorities that the following tables are compiled with a feeling of uncertainty as to exactness, but I have endeavored, by a most careful comparison of the various statistics, to be as correct as possible.

Universal Statistics obtained from the 1880 Census of Fifteen of the Leading Countries in the World.

	Blind.	Deaf-mutes.
Average number of blind and deaf-mutes per million of population.	1,063 *	926 †
Average number of female blind and deaf-mutes to every hundred male.	93½ ‡	87
Increase in number of blind and deaf mutes per million of population during the last half century.	See U. S. statistics. Unable to find in statistics of other countries.	141
Countries in which the increase of blind and deaf-mutes is greatest; arranged according to rank.	Russia, Norway, Ireland, Spain, Italy.	Switzerland, Norway and Sweden, Austria, Italy.#
Countries in which the decrease of blind and deaf-mutes is greatest; arranged according to rank.	England, Belgium.‖	France, England, Scotland, Belgium.‖

* In 1880 Russia had 180,000 blind. Finland alone had 4,452, or 2,226 to the million of population—four times as many in proportion as France. Smoky huts are said to be one of the principal causes. Algeria had 6,666, or 1,750 to the million of population, which is more than 50 per cent. over the European average; Norway, 1,199, or 1,362 to the million of population, and Ireland, 6,096, or 1,180 to the million of population.

† In 1880 Switzerland had 4,445 deaf-mutes, or 2,469 to the million of population; Austria, 30,500, or 1,220 to the million of population; Sweden, 4,834, or 1,050 to the million of population; Ireland, 5,311, or 1,028 to the million of population, and Italy, 15,300, or 900 to the million of population.

‡ In Norway the number of female blind to every hundred males was 108, and in Sweden 118.

# Within the last forty years Switzerland has increased by 624 deaf-mutes to the million of population; Norway and Sweden, 315; Austria, 178, and Italy, 74.

‖ In 1860 Belgium had 874 blind and 450 deaf-mutes to the million of population, while in 1880 she had but 810 blind and 404 deaf-mutes. In 1831 England had 545 deaf-mutes to every million of population, and in 1871 only 504.

United States Statistics obtained from the Census of 1880.

	Blind.	Deaf-mutes.
Number of blind and deaf-mutes...........	48,928	33,878
Number of blind and deaf-mutes to the million of population........................	1,087	678
Increase in number of blind and deaf-mutes to the million of population during the last half century........................	550*	208*
Number of female blind and deaf-mutes per hundred males........................	87	82
Percentage of foreign-born blind and deaf-mutes	17 p. c.	9 p. c.
Percentage of colored blind and deaf-mutes...	1½ " †	0·009 p. c.

* In 1830 the number of blind to the million of population were 420 and deaf-mutes 470, and in 1880 the number of blind to the million of population had increased to 970 and of deaf-mutes to 678.

† In 1880 the average number of colored people to one million white was 152,804.

From these statistics it is evident, first, that there are more blind in the world than deaf-mutes; second, that the proportional number of female blind is greater than that of female deaf-mutes; third, that the proportional increase of blind and deaf-mutes varies greatly in different countries, the former being more numerous, as a rule, in countries where poverty, filth, and ignorance prevail the more, while the latter are more numerous in mountainous districts; fourth, that the proportional decrease of blind and deaf-mutes is greater, as a rule, in the countries which, by the proper education of the people, have taken extra precautions against their increase; and fifth, that the number of blind per million of population in the United States is above the universal average, while the number of deaf-mutes is below the universal average, and that the increase of both classes has risen in numbers much faster in proportion than the population. Howe states that during the last twenty years blindness has increased proportionately four times as rapidly as the population, and that the increase is greater as we go from west to east and from north to south, showing a greater percentage in the more densely populated portions and among the negroes.

Deafness prevails much more among children than does blindness, the ratio of which increases with years. About twenty per cent. of the blind are under twenty years of age; thirty per cent. are between twenty and fifty years, while fifty per cent. are over fifty years of age.

The causes of blindness are: First, constitutional diseases, such as acquired and hereditary syphilis, spinal fever, meningitis, and the acute eruptive fevers; second, idiopathic diseases of the eye, of which ophthalmia neonatorum ranks first; third, heredity; and, fourth, injuries.

In 1886 a canvass was made of all the European institutions for instruction of the blind, and it was found that 17.19 per cent. were congenital, 33.08 per cent. were caused by idiopathic diseases of the eye, 8.15 per cent. were caused by injuries of the eye and head, 33.18 per cent. were caused by constitutional diseases, and 8.40 per cent. were of unknown origin.

There is a wide difference of opinion as to the percentage of blindness caused by ophthalmia neonatorum. Some authorities say thirty-five or forty per cent., while several eminent oculists state that fully half of the blindness in Europe is due to this disease. The estimated percentage of congenital blindness can not be very accurate, and is in all probability too high, for, no doubt, many children, who seemed to be blind from birth, had perfect eyes, the vision of which was destroyed by the carelessness of the nurse or parents in exposing them to too bright a light.

The male blind outnumber the female because boys take more risks in their sports than girls, and because their occupations are more hazardous.

Many unfortunate ones have lost their sight on account of their own or their parents' debauchery. The price the debauchee pays for indulgence is simply fearful to himself and his poor, sin-cursed offspring.

There is a great difference of opinion regarding the proportion of congenital and acquired cases of deaf-mutism, but fifty per cent. of each is probably a good estimate.

Of the congenital cases the most frequent causes are heredity and marriages of blood relatives. To the latter cause alone Dr. Caspar Singer, of Vienna, attributes at least twenty per cent. of all deaf-mutism.

It is probable that climate, race, and modes of living have considerable influence in the causation of deaf-mutism, and from the above statistics we see that mountainous regions give a larger proportion of deaf-mutes than do low, level countries. This is, no doubt, due to the frequency of ear diseases in such altitudes and to the intermarriages, which are so common among the inhabitants of mountainous districts.

Acquired deaf-mutism is not so often caused by primary affections of the ear as by intracranial processes and general diseases. Of the former the different forms of meningitis stand at the head of the list, and of the latter scarlet fever ranks first, with typhoid fever, measles, diphtheria, and mumps in the order named.

A great many cases of deaf-mutism are due to neglected primary affections of the ears in childhood. There is, perhaps, no organ in the human anatomy the diseases of which are so sadly overlooked and neglected in childhood as the ear, and when aural disease has existed sufficiently long to produce an atrophied state of the organ little hope can be entertained for successful treatment.

Which is the more conducive to misery and discontent, blindness or deaf-mutism?

This is a question over which I have often pondered, and it is not a very easy one to answer because of the impossibility of gaining data of sufficient extent and reliability, but I have concluded, after considering the sources of happiness, that although sight may be more essential to those who pursue manual labor for their support, deafness is the greater obstacle in the development of the intellectual and moral faculties, and is therefore the more conducive to unhappiness. Blindness affects only the physical or the material well-being, while deafness affects mostly the mental constitution, and the calamity which befalls the mind of the deaf-mute is one of the most pitiable in the catalogue of human woes. Fortunately, those of one class always prefer their condition to that of the other. The deaf always pity the blind, while the blind are apt to think deafness the worst of afflictions and thank Providence that they have not been thus afflicted. Each knows what he would miss if he were to lose the sense which he possesses and does not realize what he has lost already.

Is there not an inherent element of sweetness in human nature which enables it to adapt itself to any condition, however distasteful? The congenitally blind, or those who lose their sight in very early life, do not feel their loss as do those who become blind later on in life. The former have no occasion to make a comparison of a bright and joyous past with a less fortunate present, and, if they possess fair intellectual powers, they ought to be as happy as those in possession of all their senses, for happiness is, in the main, subjective in its nature.

The congenitally blind can be educated and learn to adapt themselves to the requirements of life within the limitations which blindness imposes, while the adult who loses his sight is often put entirely out of relation with previous conditions.

Although the congenitally blind are not equal to those born with good vision, either in physique or mental vigor, their sensibilities are, as a rule, less acute, and for this reason their sufferings are less keen. They know nothing of the conveniences or the delights that belong to their more fortunate brethren, who have not been deprived of the blessings of sight, and they can enjoy all the pleasures of the mind except those that belong exclusively to the possession of vision. On the other hand, it is supposed that one who has lost his sight after having once enjoyed it would always regret it, and that this regret would bring more or less unhappiness.

The only intellectual difference between the deaf and the blind is that the blind see not what they know, while the deaf know not what they see.

An uneducated blind person, doomed to a life of helplessness and mental inertness, is certainly a pitiable object, and I shall endeavor to show in this paper that an uneducated deaf-mute is even more pitiable.

To quote Dr. George P. Field: "The blind but hearing infant, having its intellectual capacity fostered by facility of interchange of thought, early begins to make progress in mental development; but the child that has either been born or has become deaf is in ordinary circumstances debarred from the influence of this potent educational stimulus, and all methods of instruction are shackled by the stupendous initial difficulties of adapting them to the perceptions of the sufferer."

To be deaf and dumb is to be ignorant of science, history, morality, and, above all, of religion, and in some cases it leads to idiocy, consequent upon the non-employment of the natural powers of the mind. The blind may engage in conversation or listen to reading, and thus be placed in direct intercourse with the world around them. Domestic converse, literary pleasures, political excitement, and intellectual researches are all within their reach, and serve as a source of great enjoyment. The deaf are cut off from all this and are always conscious of a defect or an infirmity, which acts as a bar to intimate relations with their fellow-man. They therefore, as a rule, take views of life and its relations that are, to a great degree, dwarfed or unequal and are inclined to be melancholy, uncommunicative, unsocial, jealous, suspicious, and dissatisfied with their lot in life. It is indeed a terribly hard one out of which to extract happiness.

Any person who has acquaintances among the blind will acknowledge that, as a rule, they are cheerful, happy, sociable, and confiding, and when entering into conversation with them he can not help but notice the bright intellectual and happy expression that crowns their countenances, for they then forget their defects, whereas the deaf, under similar circumstances, are only reminded of their infirmity and feel downcast when addressed.

In the blind the other senses become refined to a remarkable degree, and they acquire in time a wonderful delicacy of perception and a remarkable ability to analyze sounds.

They are able to tell a man's character by his voice, for the voice is the truest exponent of a man's inner life. They can tell a man's age by the tone of his voice, which undergoes a slight alteration each year. They can tell a man's height by the direction from which his voice proceeds.

They remember old acquaintances by their voices, and by the voice they are able to detect emotion.

To no less degree are the senses of touch, taste, and smell developed in the blind, while in the deaf they, as a rule, become less acute.

History introduces to us scores of individuals who have triumphed over all the difficulties of blindness and have become the most illustrious performers of their age, such as Homer, Ossian, Milton, Blacklock, Prescott, and many others, while there is hardly one deaf-mute whose name is known in history.

Thus it is evident that of the two infirmities deaf-mutism is the more conducive to unhappiness, and yet the great majority of people, if offered the alternative of blindness or of deaf-mutism, would unhesitatingly accept the latter.

REPORT OF TWO CASES OF

HÆMORRHAGIC MALARIAL FEVER WITH MULTIPLE POINTS OF HÆMORRHAGE.

By W. R. LIVINGSTON, M. D.,
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That blood or the constituents of blood may be lost from malarial causes is a long-recognized fact. This transudation, because it is usually from the kidneys, has been termed malarial hæmaturia, or malarial hæmatinuria, and is of two general classes.

First, intermittent hæmaturia in which the presence of bloody matter in the urine is not constant—a mild though persistent form, not fatal of itself, but with passages of bloody urine recurring sometimes through several years. It may occur in any malarial district, and is not, like the second, malignant malarial hæmaturia, confined to highly malarial districts of tropical and subtropical countries. This symptom of pernicious malarial infection is in its severe forms rapidly fatal unless energetically treated. The term hæmaturia, by which this form of malarial disease is generally known, is not so expressive of the condition as hæmorrhagic pernicious malarial disease, since there may be other hæmorrhages, such as epistaxis, hæmatemesis, bloody stools, oozing from the gums, petcchiæ, or ecchymoses, from the conjunctivæ and from rupture of the spleen.

In many cases the bright-red blood color of the urine may be due to the biliary pigments (Féraud) or hæmatin, and contain few or no discoid corpuscles. When present, these corpuscles may be more or less disintegrated and dehæminized, while in the more actively hæmorrhagic cases they are unchanged or even clotted.

Hæmaturia accompanied by epistaxis is comparatively frequent, but reported cases of loss of a considerable quantity of blood are less common, though they have been noted, as McLean (1), in writing of forms of malarial disease treated in Hyderabad, India, says: "Cases were admitted to the hospital presenting from the first signs of depression, fever continuous, skin jaundiced and covered with petechiæ, with a disposition to hæmorrhage from the nose, mouth, and bowels, and almost invariably delirium. Unless energetically treated, such cases hasten rapidly to a fatal termination by exhaustion and coma."

He also mentions two cases of hæmorrhagic remittent fever occurring in Madras having black vomit and closely resembling yellow fever, but does not give them in detail.

Morehead (2), writing of this disease in Bombay, states: "There may be oozing of blood about the gums and lips, or epistaxis, or vomiting of blood or of dark-colored grumous fluid, or hæmaturia may be present."

Patients of both Morehead's and McLean's were markedly adynamic, while mine did not show much more depression than could be accounted for by the acute anæmia.

In the treatment of this condition one finds a diversity of opinion, and the value of quinine hypodermically is not so universally recognized as it deserves to be. Recent articles condemning quinine in this condition have induced me to report the following cases selected from those treated by me while in charge of the Hospital Americano at Tampico, Mexico:

Case I.—Peon, aged twenty-three years; married; admitted August, 1895.

History negative, except for a malarial attack two years previous of not great severity. He was treated with native herbs. Recovery was slow, cachexia lasting several months.

Present Attack.—Has had for several days a feeling of malaise, nausea, bitter taste in mouth, slight rise of temperature, chilly sensations, but no distinct chill; constipation, followed by a diarrhœa of light-colored pasty stools; headache, and pains in the back. On the night before his admission all the symptoms except fever became more pronounced, with occasional vomiting of bilious matter, becoming a dark brown, almost black, which made patient believe he had yellow fever, "vomito negro." With more frequent vomiting the vomitus became brighter red in color, increased in amount by copious draughts of water taken to relieve the excessive thirst. In the early morning urine voided was of dark-red color, and this was followed by bloody stools. Loss of blood was considerable.

On admission patient was prostrated, conjunctivæ and lips blanched, scleræ yellow; jaundice not so well marked on skin because of its natural brown color. Temperature 100.5° F. Vomiting a bright-red fluid. Retching almost constant. Urine and passages from the bowels also of a bright-red color. Senses obtunded. Answers questions when aroused, but apathetic. In half an hour various ejecta filled an ordinary chamber pot.

Diagnosis.—Hæmorrhagic pernicious malarial fever.

Treatment.—Immediately on admission I gave hypodermically thirty grains of quinine and urea (Merck), and for vomiting a cocaine-carbolic-acid-bismuth mixture. Half an hour later gave fifteen grains of quinine hypodermically and fifteen drops of turpentine in emulsion by mouth, and in an hour these were repeated, making a drachm of quinine and urea hypodermically in an hour and a half. About this time hæmatemesis and rectal hæmorrhages ceased. The hæmaturia continued in greatly lessened degree till the evening of the next day, after which time the urine continued clear. Morning temperature slightly subnormal. On the day after his admission, as I was still afraid to administer quinine by the stomach, thirty grains were given hypodermically. On the second day after his admission he was given iron, quinine, and strychnine, half an ounce of caña (a kind of native rum), and a glass of milk every four hours. No return of fever or hæmorrhages. Because of the profound anæmia he remained in the hospital three weeks. Two months later the cachexia and jaundice had disappeared, though patient remained in *la tierra caliente.*

CASE II.—Peon, aged nineteen years. Recently imported from the plateau, consequently not accustomed to miasmata.

History.—For several days before admission he had noticed blood-tinged saliva, which gradually became more bloody; no noticeable fever. Some headache, constipation, ill defined pains in the back; bitter taste in the mouth, but no vomiting. Patient continued at work until, on the night before his admission, he noticed hæmaturia, bloody diarrhœa, epistaxis, oozing of blood from conjunctivæ, black vomit, and ecchymoses up to three inches in diameter, following in rapid succession. No chill; did not think he had any fever. No quinine had been taken.

On admission, temperature 99.6°. Skin and scleræ jaundiced, pulse soft and weak, acute anæmia from hæmorrhages, but surprisingly little loss of strength in proportion to the quantity of blood lost. Retching violent and almost constant. Examination of mouth showed a narrow dark line at dental margin of gums from which blood was oozing. Conjunctivæ injected, but points of hæmorrhage could not be determined.

Ecchymoses were especially marked on the trunk. Stools of bright-red color, liquid, and contained but little fæcal matter. Urine bright red and contained clots, which, plugging the urethra, caused pain and some difficulty in urination.

Treatment.—On admission, thirty grains of quinine and urea, repeated in an hour, then fifteen grains every four hours for four doses—all hypodermically. During next twenty-four hours he received two rectal irrigations of quinine and urea (1-to-1,000 solution), containing one drachm of tincture of opium each, for the painful dysentery which developed about the time of admission. There was no other medication, as I had by this time learned that quinine alone could be depended upon to correct the symptoms. Hæmorrhages promptly diminished, and in eighteen hours had stopped altogether. Next day he received fifty grains of quinine hypodermically, after which the elixir of iron, quinine, and strychnine was given by mouth. He was discharged in about a month without the return of any symptoms. In spite of the large quantity of quinine exhibited, the tinnitus aurium was only slight. Small subacute abscesses developed at sites of two of the injections, but healed readily.

These cases present an atypical course, and there is difficulty, at least in Case II, of making an early diagnosis of malarial disease. Some of these cases so simulate yellow fever that a differential diagnosis can only be made by the aid of the microscope.

Some observers, such as Plehn (3), Catchings (4), and McDaniel (5), do not believe quinine is indicated in the treatment of this condition.

Plehn (3) says that in the hæmaturia of the west coast of Africa "quinine is useless, and may even do harm." He gave fifteen to twenty-five grains a day placed dry on the tongue.

Catchings (4) gives ten grains of calomel every hour till he gets the desired effect, and says a hundred grains are sometimes necessary. He objects to quinine because it "never stopped hæmorrhages," and "is irritant to the stomach when nausea is our worst symptom to combat."

McDaniel (5) states the death-rate is higher with quinine, but in his table of eighty-five cases, with forty-one per cent. of deaths, he does not specify the amount of quinine given. This is important, as shown by Féraud (6), who publishes the following table from the records of the French hospital of Goree, Senegal:

	Cases.	Deaths.
		Per cent.
Small doses of quinine—calomel purge.......	71	31
Moderate doses of quinine—calomel, small dose	69	19
Small doses of quinine—purgative treatment..	83	31
Large doses of quinine.....................	73	7

Others, such as Van Horn (7), Küchel (8), and Rigney (9), believe quinine should be given at once and in large doses.

One who has seen the violent retching of these patients will not wonder why Plehn did not get any results, and Catchings's objections are readily overcome when the drug is given hypodermically in some readily soluble form and in sufficient quantity.

That quinine will sometimes temporarily increase or may even induce a hæmaturia is generally believed, but this hæmaturia is not of a grave character, stops when quinine is no longer administered, is probably due to some idiosyncrasy of the patient, and is not of the kind under consideration. In Case II no quinine was taken before the patient's admission.

Webb (10) says: "Quinine will undoubtedly, in a certain number of cases, increase the hæmaturia. Seeing this, the timid operator stops his quinine. His patient dies with quinine under the ban of killing him, whereas a bolder hand, directed by the proper idea of the true cause of this symptom, would have unhesitatingly continued it, and his patient might have a good chance to live."

In many of the statistics, such as those of Féraud (6) and of Webb (10), who reports thirty-three cases treated with full doses of quinine with two deaths, even these small mortalities might have been still further reduced had quinine been given hypodermically, as in both Dr. Webb's fatal cases the stomach would not retain the quinine. Both my patients would probably have died had I waited to give quinine by the mouth. Quinine given by the mouth may be repeatedly rejected, and even if retained, in the hyperæmic condition of the stomach with the presence of disintegrating blood, the absorption is delayed and uncertain when a prompt action is imperative. In most of these cases the bile present in the stomach may change the sulphate, generally administered, into a less soluble salt.

In milder malarial cases, if seen during pyrexia, it is my custom, as suggested to me by Dr. H. S. Squires, of Aguas Calientes, Mexico, who has used it for several years, to give five to eight grains of acetanilide at once, as it relieves the fever, headache, and pains, and produces relaxation and more or less sweating, whereas quinine by the mouth during this stage often temporarily increases the patient's discomfort. I then give a cathartic and quinine. When the vomiting precluded such a course, and in pernicious cases always, quinine and urea (Merck) were given hypodermically. The delay of administration and the uncertainty of prompt action, when given by mouth, often lead to an unnecessarily fatal termination.

This compound is readily soluble, the action is prompt and certain, almost non-irritating, and will, as in Case II, control the vomiting, or permit of its being independently treated. The amounts given in these two cases were larger than is required in cases farther north, but individuals in the tropics, especially during malarial intoxication, not only require larger doses, but are not easily cinchonized. As abscesses only followed two injections (in Case II), I believe they were not due to the preparation, but rather to faulty technique and lowered tissue resistance.

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ATHREPSIA OR TUBERCULOUS MENINGITIS?

By WILLIAM J. ROBINSON, M. D.

In the confident hope that among the numerous readers of the *Journal* many will be found who, on critical analysis, will be able to shed some light on the subjoined case and thus help to decide the question given in the heading, I ask for the privilege of some of the *Journal's* valuable space.

Mary —, two years old; residence, unwholesome, unclean part of Brooklyn; always slight and delicate; has been unwell for the last two or three months. One physician diagnosticated malarial disease, another one indigestion; but as the treatment was not carried out persistently and systematically the child kept on failing and getting worse. She complained of no pain, but her sleep was restless and broken; her appetite was nil; her stools were diarrhœal, though not pronouncedly so, but of a peculiar, exceedingly offensive odor. The wasting was extreme, the skin of the thighs hanging in folds. There was fœtor of the mouth. On a certain Saturday afternoon she was brought over from Brooklyn to New York to be examined by Dr. A. Dr. A. diagnosticated "probably gastro-enteritis," advised not taking her back to Brooklyn, and prescribed a rhubarb-and-soda mixture, containing ten grains of sodium bicarbonate to each dose. Toward evening the child became much worse, and at midnight Dr. B. was sent for in a hurry. Dr. B. found the child comatose and in collapse; the pulse was thready, irregular, and intermittent; respiration shallow; temperature, 97°; face pinched, and body, especially lower extremities, ice cold. Dr. B. administered stimulants (brandy, with ten drops of camphorated tincture of opium), gave a mustard bath, applied vigorous friction, and the child was brought out of its condition of collapse; it remained comatose, though. On obtaining the history and after giving the child a thorough examination, Dr. B. pronounced it a case of athrepsia, pure and simple. He thought that one of the factors in inducing the collapse and coma was the exhaustion and shaking up from a three-hour ride on the trains and cars; another factor was probably the sodium bicarbonate, for it required but very little of any alkali to induce heart failure in a child bloodless, starved, and wasted as she was. On the afternoon of the next day the little patient was seen by Dr. C., who administered to her a dose of sodium bromide (five or ten grains). Within a short time she fell again into a condition of collapse and Dr. B. was sent for, who found the child *in extremis;* the body was of an ashen color and ice cold, the pulse at times altogether imperceptible. Dr. B. is certain that if let alone the child would have expired within a very short time. In conjunction with Dr. C. he proceeded to stimulate the child energetically (*sine pulsu nulla therapeia*). Stimulants *per os* had no effect; hypodermics of one two-hundredth of a grain each of nitroglycerin and strychnine (in brandy) were given at intervals of half an hour (three in all); a rectal injection was given which brought away a large amount of exceedingly fœtid, foul, and musty discharge; rectal enemata were then given of liquid beef extract, brandy, eggs, and tincture of musk; also a hot mustard bath. It took very long before there was any response. At last the poor child rallied. In a short while the case assumed an entirely different aspect; all the time asthenic, it from this time assumed a sthenic character. The pulse became comparatively strong and rapid, the face flushed, the temperature rose to 101° F. In about two hours the child had convulsions (was it overstimulated?). That evening Dr. A. called in and pronounced it a case of tuberculous meningitis. Dr. C. remained in constant charge of the case, Dr. A. and Dr. B. acting as consultants, each insisting on the correctness of his diagnosis. The child remained feverish, comatose, and in occasional convulsions until Thursday, when *exitus letalis* took place, there being no apparent change in the child's condition during the last four days.

Now, as to the question of diagnosis. Dr. A. bases his diagnosis of tuberculous meningitis on the coma and convulsions. Dr. B. says that coma and convulsions may close the scene in almost any infantile disease, and rejects with disdain the diagnosis of meningitis. He points out that all the pathognomonic symptoms of meningitis were absent. There was no vomiting at any time; the abdomen was neither boat-shaped nor tympanitic, but soft and insensitive to pressure; there was no rigidity whatsoever of the neck and spine muscles; strong pressure at the back of the neck failed to elicit any sign of pain or suffering; both pupils were equal; there was no paralysis whatsoever (the sphincters, muscles of deglutition, etc., remaining normal until the very end). And the minor symptoms were also absent: no frown on the face, no hydrocephalic cry, no *tache cérébrale*, etc. Athrepsia infantum, on the contrary, fits the case exactly, according to Dr. B. Now, will the readers of the *Journal* kindly express themselves as to which diagnosis was, in their opinion, the correct one?

119 East One Hundred and Twenty-eighth Street.

Therapeutical Notes.

Quinine by Inunction.—The *Journal des praticiens* remarks that the hydrochlorosulphate of quinine is readily absorbed by the skin. It gives the following formula:

℞ Quinine hydrochlorosulphate.......	1 part;
Benzoinated lard..................	5 parts.

M. To be rubbed in under the axillæ.

A Dressing for Varicose Ulcers of the Leg.—The *Progrès médical* attributes this formula to Simonelli:

℞ Sodium chloride in impalpable powder.	10 parts;
Powdered menthol.................	1 part.

M.

Thyreoid Extract in the Treatment of Fibroid Tumors of the Uterus.—Dr. W. M. Polk (*Medical News*, July 3, 1897), after mentioning the beneficial effect of thyreoid extract on the metrorrhagia of fibroid tumors of the uterus, states that in several cases he has observed also not only a checking of the tumors' growth, but even a decided retrocession with amelioration of the local symptoms and improvement in the general health.

An Application for Erysipelas of the Face.—The *Progrès médical* quotes the following from the *Semaine médicale*:

℞ Carbolic acid, Tincture of iodine, Alcohol,	each.......... 1 part;
Oil of turpentine..................	2 parts;
Glycerin...........................	3 "

M. Paint the affected area with this liniment every two hours, and then cover the face with aseptic tarlatan.

Sodium Chlorate in the Treatment of Uterine Cancer.—Bovehner (cited by Chéron in the *Gazette de gynécologie* for June 15th) gives the following formula:

℞ Sodium chlorate (not chloride)....	20 parts;
Syrup of orange flowers..........	30 "
Distilled water..................	100 "

M. S.: Take at first two tablespoonfuls a day, and increase rapidly to six tablespoonfuls.

Bovehner uses the chlorate topically also, employing various mixtures of which the following is one:

℞ Sodium chlorate, Bismuth subnitrate,	each......... 10 parts;
Iodoform..........................	4 "

M. To be applied to the cervix on tampons.

A Tonic Liniment.—Robin, in an article on pyelitis (*Bulletin général de thérapeutique; Journal des praticiens*, June 26, 1897), recommends in the general hygienic treatment frictions of the body with this mildly stimulating liniment:

℞ Tincture of cinchona, Fioravanti's balsam, Spirit of camphor,	each...... 100 parts;
Tincture of nux vomica..........	25 "
Menthol.........................	2 "
Essence of cloves...............	1 part.

M.

Methyl Salicylate in the Treatment of Gonorrhœa.—By reason of the great power possessed by methyl salicylate of penetrating investing membranes, M. Duquaire (cited in the *Journal des praticiens* for June 26th) has conceived the idea that it will reach the gonococci even when they are seated in the deepest layers of the mucous membrane. He reports a case in which its employment cured the disease in five days, but he does not generalize from that one case. He uses the following solution:

℞ Methyl salicylate.................	1 part;
Bismuth subnitrate................	20 parts;
Liquid vaseline...................	100 "

M. Three injections are to be given daily. The patient should urinate, then take the injection, and hold it in the urethra as long as possible. The injections are not painful.

To Cut Short an Eruption of Herpes.—In the *Journal des praticiens* for June 26th M. Leloir is cited as being of the opinion that it is possible to arrest the evolution of herpes by applying to the affected surface, as soon as the initial redness shows itself, a pledget of absorbent cotton soaked in a one-to-fifty alcoholic solution of resorcin, a one-per-cent. solution of thymol, a three-per-cent. solution of menthol, a one-to-four-hundred solution of carbolic acid, a one-to-fifty solution of tannin, or the following:

℞ Resorcin.....................	3 parts;
Cocaine......................	1 or 2 "
Alcohol......................	100 "

M. The cotton should be covered with an impermeable tissue to prevent evaporation.

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THE PHARMACOPŒIAL REQUIREMENTS AS TO CALOMEL.

A paper entitled Corrosive Sublimate in Calomel, by Mr. Lyman F. Kebler, was presented at the June meeting of the Pennsylvania Pharmaceutical Association and is published in the July number of the *American Journal of Pharmacy.* While he deprecates the countenancing of laxity in such matters, Mr. Lyman gives it as his opinion that the official requirements now in force as to calomel are slightly too rigid. He quotes as follows concerning calomel from the last revision of the pharmacopœia: "A white, impalpable powder, showing only small, isolated crystals under a magnifying power of a hundred diameters. Insoluble in water, alcohol, or ether. In contact with calcium hydrate T. S., the salt is blackened. If one gramme of the salt be shaken with ten cubic centimetres of water or alcohol, the respective filtrates should not be affected by hydrogen sulphide T. S. or silver nitrate T. S. (absence of *mercuric chloride*)."

Mr. Kebler says that several years ago he received a sample of calomel that gave a prominent yellow coloration when treated with limewater, forming yellow wash instead of black wash, so to speak. He asked himself at once if it was possible that any manufacturer would put upon the market calomel containing such an apparent quantity of corrosive sublimate. Further examination showed that the specimen in question contained an appreciable quantity of that poisonous compound. Other makes were secured, and they all showed a greater or lesser degree of yellowish coloration when treated with limewater. The various available products were then examined critically according to the pharmacopœial requirements, and the following were the results: The color varied from white to a decided cream-color, isolated broken crystals were present in all the material examined, and minute traces of mercuric chloride were indicated in every instance.

Mr. Kebler says that since that time he has watched the quality of the calomel in the market with much interest, but thus far all his efforts have failed to find a specimen absolutely free from corrosive sublimate as indicated by the pharmacopœial tests. In two cases, however, both the silver nitrate and the hydrogen sulphide failed to give absolute evidence of the mercuric chloride, but a transitional yellow was produced even with these specimens when they were treated with limewater. One of them was a beautiful product of Japanese origin consisting of crystalline plates; the other was an old sample found in the laboratory.

As to the color test, Mr. Kebler states that on several occasions he has repeatedly washed calomel with water, to remove the soluble mercury compounds, and in every instance a yellowish coloration was shown at the point of contact when the washed calomel was treated with limewater. This, he says, suggests the conclusion that calomel gives a transitional yellowish coloration at the point of contact when treated with limewater.

As to the solubility test, most of the standard works say that calomel is insoluble, but Comey's *Dictionary of Chemical Solubilities* is quoted as saying that it is "nearly or almost insoluble in water." Mr. Kebler then cites Kohlrausch and Rose as having found, calculating from the electrical conductivity of calomel in water at 64.4° F., that a litre of water dissolves 3.1 milligrammes of mercurous chloride. According to Mr. Kebler's own observations, calomel is nearly as soluble in alcohol as in water, but insoluble in ether.

It is better that the pharmacopœial requirements should be unnecessarily rigid than at all too lax, but Mr. Kebler's observations seem to show that those now in force may safely be relaxed to some extent. At all events, it is comforting to have Mr. Kebler's assurance that, with one exception, none of the specimens of calomel examined by him according to the most rigid tests for the past few years have contained over a hundred-thousandth of one per cent. of corrosive sublimate.

THE IODIDES IN THE TREATMENT OF HEART DISEASE.

The long-continued use of small doses of an iodide in the treatment of certain forms of heart disease, as advocated by French authors, particularly Huchard, has for the last five years been under trial at the hands of Vierordt, of Heidelberg, who reported upon it at the fifteenth Congress für innere Medicin (*Centralblatt für innere Medicin*, June 26th). The patients whom Vierordt subjected to this plan of treatment were in part subjects of arteriosclerosis that were free from cardiac distress, but for the most part those who suffered from such distress, especially angina pectoris. He excluded those in whom there was pronounced cardiac weakness, those who had albuminuria, and those who were over sixty years of age.

Sodium iodide was ordered in doses of from four to eight grains, to be taken often enough for the patient to get fifteen, twenty-five, or thirty grains in the course of twenty-four hours. It was given in milk or seltzer water; subsequently potassium iodide was ordered in the form of Sandow's effervescent salt. The idea was that the patient should take the iodide for a long time, although with intermissions—the amounts mentioned for about nine months of the first year; and after that longer periods of its continued administration were directed from time to time. If there were intercurrent attacks of distressing cardiac symptoms the iodide was given more freely, sometimes in conjunction with digitalis, nitroglycerin, or the like. The drug was well borne in most of the cases; it happened that no idiosyncrasy against it was shown by any of the patients, about twenty in number. There was occasionally a mild iodine coryza or the like, but this was overcome by discontinuing the use of the drug for a time, to resume it after an interval. In a few instances this had to be done for the sake of the stomach, but in the great majority of the cases a decidedly favorable influence of the drug on the appetite and the nutrition was observed.

The effects on the arteriosclerosis were undoubted. They were the more pronounced in the cases accompanied by cardiac distress, especially angina pectoris. In order to make the test all the stricter, those patients only were subjected to the treatment who had previously been treated dietetically and in other ways in vain and could be kept under observation for periods varying from two to four years after the use of the iodides was begun. On six such patients, five of whom were subject to seizures of angina pectoris that were sometimes of the severest type, the effects were quite striking; in some of the cases they were brilliant. The ability to work, which had been entirely lost, was regained, and patients who before had suffered with cardiac pain and faintness and been unable to walk on a level floor could now walk up stairs. Vierordt thinks that in about half the cases of angina pectoris due to coronary sclerosis long-continued benefit may be expected to follow the employment of this treatment, and it seems to be of little consequence, he adds, whether the arteriosclerosis is of syphilitic origin or not.

The *modus operandi* of the iodides is regarded by Vierordt as entirely hypothetical; at all events, he is convinced that Sée, Huchard, and others are wrong in attributing it to a direct influence on the action of the heart and on the vasomotor nerves. He thinks it most probable that the morbid process in the blood-vessels, which would otherwise always show a progressive character, is brought to a standstill, and that consequently the heightened blood-pressure is gradually lowered, which would provide perfectly for the reestablishment of the circulatory function for a long time. As to any retrogression of the vascular changes, however, the objective clinical phenomena do not indicate it.

MINOR PARAGRAPHS.

EXTERNAL INTESTINAL PERFORATION IN TYPHOID FEVER.

Haegler (*Korrespondenzblatt für schweizer Aerzte*, 1896, No. 17; *Deutsche Medizinal-Zeitung*, June 14, 1897) records the case of a woman, thirty-five years old, who was received into a hospital with the characteristic symptoms of typhoid fever. In the middle of her abdomen there was a hernia as large as a child's head, and the skin covering it was marked with broad scars which crossed each other in an irregular course. They were the results of a laparotomy performed some years before. On the sixth day after her admission into the hospital a bluish spot as large as a five-franc piece appeared at the summit of the abdominal swelling, and on the following day the epidermis of this spot was raised by the formation of a bleb. An opening as large as the head of a pin formed in the bleb on the same day, and there escaped from it foul-smelling gas and a little turbid liquid of a fæcal odor. This fæcal fistula grew larger, and in a few days it was two thirds of an inch wide and about two inches long. Through it the interior of the intestine, highly reddened and in places ulcerated, was plainly to be seen. Almost all the fæces passed by this opening. Within ten days three other fistulæ formed below the first one. The patient was now very weak, was shockingly emaciated, and had a bedsore over the sacrum. At her own urgent request she was sent to her home, whence at the end of a month there came the report that she was almost entirely well. The author soon saw her. He found that the fistulæ had closed and that the woman's general condition was excellent. His explanation of the case is that a loop of intestine included in the hernia became the seat of typhoid ulceration and contracted inflammatory adhesions to the thin abdominal wall; further, that the impaired nutrition of the parts, aided perhaps by external injuries, led to perforation at various points in the intestinal loop.

DR. HARTIGAN'S METHOD OF ESTABLISHING INTESTINAL ANASTOMOSIS.

Dr. Hartigan, who describes his operation in this issue of the *Journal*, is obviously quite entitled to the credit of priority, in spite of the prior publication of a similar description, to which he alludes in a paragraph added to his original article. Dr. Hartigan's article has been in our hands since March.

NEW VIEWS OF KISSING.

Apropos of a recent alleged decision by some judicial body in Orange, New Jersey, declaring the practice of kissing to be unhygienic, the *Écho médical du Nord* for June 20th remarks that an English journal gives the opinions of a number of medical authorities on the question. One of these authorities, Mr. Bridger, thinks that in the act of kissing we encounter only beneficial microbes, and he adds that the advantages of kissing far outweigh the infinitesimal risk that it may occasion, for it furnishes us with microbes that are useful in digestion. "A hint to dyspeptics," says the *Écho,* "kissing is stomachic and digestive!"

ARSENIC IN THE TREATMENT OF LUPUS ERYTHEMATOSUS.

ORDINARILY the treatment of this disease is quite unsatisfactory. In nine cases Dr. J. Schütz (*Archiv für Dermatologie und Syphilis,* xxxviii, 1; *Centralblatt für Chirurgie,* June 26, 1897) has met with excellent results from the topical use of a weak solution of arsenic—a drachm of Fowler's solution, from six to eight drachms of distilled water, and two drops of chloroform. This is to be shaken when it is used. It is to be pencilled on the affected area night and morning and allowed to dry. In from four to six days a mild inflammation shows itself, but it subsides in from four to eight days more under simple treatment. Then the pencillings are repeated, and they are better borne each time. The disease is usually cured in ten or eleven weeks.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 13, 1897:

DISEASES.	Week ending July 6.		Week ending July 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	3	23	2
Scarlet fever	126	9	103	8
Cerebro-spinal meningitis	0	0	1	0
Measles	160	4	175	7
Diphtheria	232	22	204	43
Croup	13	0	4	1
Tuberculosis	145	98	180	107

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general during the week ending July 10, 1897:

Small-pox—United States.

Brooklyn, N. Y	June 26–July 3	1 case.	
Pueblo, Col	June 26–July 3		1 death.
Gloucester, Mass	June 19–26		1 "

Small pox—Foreign.

Montevideo	May 29–June 5	1 case.	
St. Petersburg, Russia	June 5–19	14 cases,	6 deaths.
Moscow, Russia	May 29–June 12	4 "	
Odessa, Russia	May 12–19		1 death.
Kanagawa, Japan	May 27–June 3	2 "	
Sagua la Grande, Cuba	June 19–26	60 "	
Calcutta, India	May 15–29		17 deaths.
Bombay, India	June 1–8		10 "
Buenos Ayres, Argentina	April 23–30		1 death.
Nagasaki, Japan	June 7–14	14 "	3 deaths.
Montreal, Canada	July 2	2 "	
Aden, Arabia	May 7	27 "	5 "
Alexandria, Va	May 28–June 3		4 "
Cairo, Egypt	May 28–June 3		3 "
Gibraltar	June 6–13	1 case,	1 death.
Hong Kong, China	April 24–May 22		23 deaths.
London, England	June 5–12	2 cases,	1 death.
Madrid, Spain	June 9–16		4 deaths.
Warsaw, Russia	June 5–12		2 "
Yokohama, Japan	May 20–27	1 case,	1 death.
Cardenas, Cuba	June 22–July 3		1 "

Cholera.

Calcutta, India	May 15–29		98 deaths.

Yellow Fever.

Cardenas, Cuba	June 12–July 3	15 cases,	2 deaths.
Matanzas, Cuba	June 18–23		3 "
Sagua la Grande, Cuba	June 19–26	40 "	
Bombay, India	June 1–8		3 "
Rio de Janeiro, Brazil	May 29–June 5	2 "	2 "
Vera Cruz, Mexico	June 29–July 1		4 "

Plague.

Hong Kong, China	June 1	4 cases.	
Taiwan, Formosa.	May 31–June 8	53 "	

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 13th inst., Dr. George Ben Johnson was to open a discussion on Abscess of the Liver.

Change of Address.—Dr. Alfred C. Palmer, to No. 13 West Franklin Street, Richmond, Va.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 4 to July 10, 1897:*

BIRMINGHAM, HENRY P., Captain and Assistant Surgeon, upon being relieved from duty at Fort Trumbull, Connecticut, by WOODRUFF, EZRA, Major and Surgeon, will proceed to Chicago, Illinois, and report for duty as attending surgeon and examiner of recruits, relieving STRONG, NORTON, Captain and Assistant Surgeon. Captain Strong, on being thus relieved, is ordered to Fort Myer, Virginia, for duty, relieving ARTHUR, WILLIAM H., Captain and Assistant Surgeon.

LIPPITT, WILLIAM F., Jr., Captain and Assistant Surgeon. The leave of absence granted him, to take effect about July 24th, is changed to take effect when his services can be spared by his post commander, and is extended one month.

MAUS, LOUIS M., Major and Surgeon, is relieved from temporary duty in the office of the Surgeon General of the Army, and on August 2d he will report for duty at Fort Hamilton, New York, relieving BROWN, PAUL R., Major and Surgeon. Major Brown, on being thus relieved, is ordered to Fort Keogh, Montana, for duty, relieving WOODRUFF, EZRA, Major and Surgeon. Major Woodruff, on being thus relieved, is ordered to Fort Trumbull, Connecticut, for duty, relieving BIRMINGHAM, HENRY P., Captain and Assistant Surgeon.

A board of officers, to consist of FORWOOD, WILLIAM H., Colonel and Assistant Surgeon-General; ADAIR, GEORGE W., Major and Surgeon; REED, WALTER, Major and Surgeon; MERRILL, JAMES C., Major and Surgeon; and WOOD, LEONARD, Captain and Assistant Surgeon, is constituted to meet at the Army Medical Museum Building, Washington, on Monday, September 27th, at 10 o'clock A. M., for the examination of candidates for admission to the medical corps of the army.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending July 3, 1897:*

SAWTELLE, H. W., Surgeon. To inspect quarantine stations on coasts of Louisiana, Mississippi, Alabama, and Florida, as far as and including Pensacola. June 29, 1897.

WASDIN, EUGENE, Passed Assistant Surgeon. To proceed to Mobile, Ala., for temporary duty. July 3, 1897.

MAGRUDER, G. M., Passed Assistant Surgeon. To inspect quarantine stations on the coast of Texas. June 29, 1897.

GREENE, JOS. B., Assistant Surgeon. On rejoining station at Detroit, Mich., to proceed to Cape Charles Quarantine for duty. June 28, 1897.

GRUBBS, S. B., Assistant Surgeon. To remain at Detroit, Mich., until further orders. June 28, 1897.

Russell, Howard C., Assistant Surgeon. To proceed to New York, N. Y., for duty. July 1, 1897.

Appointment.

Howard C. Russell, of the District of Columbia, commissioned as Assistant Surgeon. July 1, 1897.

Births, Marriages, and Deaths.

Married.

Bacon—James.—In Elmira, N. Y., on Wednesday, June 30th, Dr. John E. Bacon, of Buffalo, and Miss Grace James.

Clarke—Tucker.—In Hope Valley, Rhode Island, on Wednesday, June 30th, Dr. Elisha Peckham Clarke and Miss Hattie M. Tucker.

Letters to the Editor.

NOTE ON THE SCARCITY OF DIOCTOPHYME VISCERALIS AS A PARASITE OF MAN IN THE UNITED STATES.

Metropolitan Hospital, Blackwell's Island,
New York, *June 18, 1897.*

To the Editor of the New York Medical Journal:

Sir: Knowing from personal investigation and the published experiences of others that *Dioctophyme visceralis,* or the giant strongyle, occurs, though rarely, as a parasite of some of the lower animals of the United States, my interest became aroused to ascertain the extent of its prevalence in man in this country. With this idea I have made a careful search through the literature of the Surgeon-General's Library, with the result that I have found but two cases of alleged *Eustrongylus gigas* among the many cases of parasites recorded. This figure seems at first very small, but when one considers that Leuckart, in *Die menschlichen Parasiten* (1867–'76, pp. 396), says that of the twenty cases recorded for man, as a total from various countries, the majority are considered unreliable by the critics, and further states that Bremser regarded only about twelve as passably reliable, and that Davaine, after adding three more to the gross number, reduces it to a net of only seven trustworthy cases, the American figure assumes a different aspect. Delafield and Prudden, in their *Pathological Anatomy and Histology,* give no statistics on the subject, and Osler (*The Principles and Practice of Medicine,* 1895), after a brief description, merely states that the parasite in question "occurs in very many animals and has occasionally been met with in man."

The two cases which I found were reported respectively by Dr. George, of College Springs, Iowa, and Dr. Martin, of Lathrop, Missouri, and will be found under the following references: 1888, lix, p. 250, *Medical and Surgical Reporter* (Philadelphia); George, M. R., *Strongylus gigas,* 1891, xii, pp. 363–367, *Kansas City Medical Index;* Martin, Z. T., *Strongylus gigas.* I endeavored to obtain from these gentlemen specimens for verification, as from the accounts given in their articles I did not feel justified in considering their cases indisputable, but, owing to circumstances due to lapse of time since the finding of the alleged strongyles, they were both unable to gratify my wish, and instead supplied me with such further data as they were able to furnish. However, after carefully reading both their printed accounts and letters to me, I consider both cases as at best merely probable ones. H. O. Sommer, M. D.,

Late Volunteer Assistant, Zoological Laboratory, Bureau of Animal Industry, and Junior, House Staff of Metropolitan Hospital, Blackwell's Island, New York.

THE LATE DR. TITTERINGTON.

Las Vegas, N. M., *June 29, 1897.*

To the Editor of the New York Medical Journal:

Sir: On Sunday, June 27th, Dr. James H. Titterington died here, at the age of thirty-three, from pulmonary tuberculosis complicated by tuberculous peritonitis and ulceration of the intestines. He was graduated in 1891 from Bellevue Hospital Medical College, New York, and served in the hospital on the house staff; he also was connected for a short time with the health department. Those who knew him, and among them the undersigned, declare him to have been a brilliant man and one destined to succeed in his chosen profession. He came here on May 30, 1897, in a very low condition, suffering mostly from high fever, diarrhœa, and intestinal colics, and, although knowing it was a hopeless case, Dr. W. R. Tipton, and Dr. F. H. Atkins, of this city, up to the time of his death showed him the most unremitting care and attention. As this was done by them purely as a matter of professional courtesy and from fraternal feelings, the undersigned, who is also here on account of his health, deems it but fitting that this public acknowledgment of these kind services be made to the profession through your journal. S. Wrubel, M. D.

Book Notices.

Lippincott's Medical Dictionary. A Complete Vocabulary of the Terms used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the Basis of Thomas's Complete Medical Dictionary. By Ryland W. Greene, A. B. With the Editorial Collaboration of John Ashhurst, Jr., M. D., LL. D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; George A. Piersol, M. D., Professor of Anatomy in the University of Pennsylvania; and Joseph P. Remington, Ph. M., F. C. S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy. London and Philadelphia: J. B. Lippincott Company, 1897. Pp. xi–1154.

This work, announced as having been "prepared on the basis of Thomas's *Complete Medical Dictionary,*" is far superior to Thomas's. It is not by any means faultless, but that may be said of any dictionary. A careful examination has convinced us that it has merits that far outweigh its shortcomings. In general the definitions are clear, although often put in words that a layman rather than a physician would use. A few exceptions to its general accuracy have caught our notice. For example, an ache is defined as "a continuous throbbing pain." That it is necessarily of a throbbing character is not generally recognized, we think. Concerning agnus castus it is stated: "This name has also been given to castor oil, or the oil of *Ricinus communis,* from its effects upon the body and the mind." Policlinic is said to be "often confused with *polyclinic,*" meaning, of course, confounded. Abdominal cavity is defined as "the abdomen." Under the verb abort, the sense of to abort a disease is not given. No distinction is made between the meaning of microscopic and that of microscopical.

The pronunciation given is in many instances not to our liking, but pronunciation is largely a matter of taste. Among the positive errors in this respect are podag'ra and other compounds ending in -agra, instead of pod'agra, etc.

Unfortunately, there are many words in use that are differently spelled by different writers, and the maker of a dictionary feels called upon to indicate his preference. The task has not been shirked in this work. The preferences that we have to commend are that of c to k (generally) in the transliteration of kappa, that of analgetic to analgesic, and that of rhachitis to rachitis. Among those that we can not approve are that of raphe to rhaphe, that of antirheumatic to antirrheumatic, that of acetanilid to acetanilide, and that of urinalysis to uranalysis. We consider it erroneous also to prefer diagnose to diagnosticate and abnormality to abnormity.

We are glad to notice the use of Greek infinitives in giving derivations. We can not admit that pubes is "an incorrect spelling of *pubis,*" meaning the os pubis, and we think "tympanites hysterica" should be tympanites hystericus.

Of mere errors of proof-reading there seem to be very few. One of them is "Rambotham's hook" instead of Ramsbotham's hook. We presume the following statement concerning the prefix a- is another: "A prefix in words of Greek derivation having a negative or primitive force." Probably privative was meant instead of "primitive." The occasional intensive force of the prefix is not mentioned.

What we consider to be the blemishes of this work, we repeat, are far outweighed by its good points, and we rate it as a substantial addition to our medical dictionaries.

BOOKS, ETC., RECEIVED.

System of Diseases of the Eye. By American, British, Dutch, French, German, and Spanish Authors. Edited by William F. Norris, A. M., M. D., and Charles A. Oliver, A. M., M. D., of Philadelphia. Volume II. Examination of the Eye, School Hygiene, Statistics of Blindness, and Antisepsis. With Thirteen Full-page Plates and Two Hundred and Fourteen Text Illustrations. Philadelphia: J. B. Lippincott Company, 1897. Pp. ix–11 to 556. [Price, $5.]

Eye Strain in Health and Disease. With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements without the Aid of Drugs. By Ambrose L. Ranney, A. M., M. D., Late Professor of the Anatomy of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Illustrated with Thirty-eight Wood Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1897. Pp. viii–321. [Price, $2.]

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, B. A., M. D., B. Ch., B. A. O. (Dublin University), L. R. C. P. I., L. M., Assistant Master, Rotunda Hospital. With a Preface by W. J. Smyly, M. D., F. R. C. P. I., Late Master of the Rotunda Hospital. With Forty-five Illustrations, and an Appendix containing the Statistics of the Hospital for the Last Seven Years. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xx–323. [Price, $1.75.]

Burdett's Hospitals and Charities, 1897. Being the Yearbook of Philanthropy. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities. An Exhaustive Record of Hospital Work for the Year. It will also be found to be the most Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Religious and Benevolent Institutions, Dispensaries, and Nursing and Convalescent Institutions. By Henry C. Burdett, Editor of the *Hospital,* etc. London: The Scientific Press, Limited. New York: Charles C. Scribner's Sons. Boston and Chicago: D. C. Heath and Company, 1897. Pp. 1019.

Transactions of the American Pædiatric Society. Eighth Session, held in Montreal, Canada, on May 25, 26, and 27, 1896. Volume VIII.

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1895.

De l'ouverture large de la caisse et de ses annexes. Par le Dr. E. J. Moure, Chargé de cours à la Faculté de médecine de Bordeaux. Bordeaux: Feret et Fils, 1897. Pp. 65.

Suite de monographies cliniques sur les questions nouvelles en médecine, en chirurgie, en biologie. No. 1. De l'appendicite; pathogénie; clinque; traitement. Par le Dr. F. Legueu, Chirurgien des hôpitaux de Paris. No. 2. Le Traitement du mal de Pott. Par le Dr. A. Chipault. Paris: Masson et Cie., 1897.

Traitement de l'ozone. Rhinite atrophique fétide. Par le Dr. E. J. Moure, Chargé de cours à la Faculte de Bordeaux. Bordeaux: Feret et Fils, 1897. Pp. 63.

Footwear in Relation to Catarrh. By J. H. McCassey, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Over-fatness. A Reliable and Harmless Way to Diminish and Cure it. By William T. Cathell, M. D., Baltimore. [Reprinted from the *Maryland Medical Journal.*]

Who Discovered Anæsthesia? By Joseph H. Hunt, M. D. [Reprinted from the *Tri-State Medical Journal and Practitioner.*]

A Brief Study of the Ophthalmic Conditions in a Case of Cerebellar Tumor; Autopsy. By Charles A. Oliver, M. D. [Reprinted from the *University Medical Magazine.*]

Description of a Successful Operation for Blepharoplasty, embracing the Outer Halves of both the Upper and Lower Lids by a Single Split Flap taken from the Forehead for Epithelioma. By Charles A. Oliver, M. D. [Reprinted from the *University Medical Magazine.*]

The Doctrine of the Internal Secretory Activity of Glands in Relation to the Pathological Anatomy of Sundry Morbid Conditions—Diabetes; Addison's Disease, Myxœdema, Cretinism, Graves's Disease, and Acromegaly. By J. George Adami, M. D., Montreal. [Reprinted from the *Montreal Medical Journal.*]

The Practice of Medicine as a Money-making Occupation. By Professor Stanford E. Chaillé, M. D. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

Clinical Lecture delivered at the Hahnemann Hospital by William Van Lennep, M. D. [Reprinted from the *Hahnemannian Institute.*]

The Annexation of Hawaii. An Address delivered before the National Geographical Society at Washington, D. C., March 26, 1897. By the Hon. John W. Foster.

Miscellany.

The Treatment of Carcinoma of the Uterus, and Ovarian Disease, without Operation.—In the July number of the *Scottish Medical and Surgical Journal*, Dr. Robert Bell, of Glasgow, refers to an interesting statement recently made by Snow, to the effect that hypodermic injections of morphine and cocaine delay, if they do not actually prevent, recurrence of scirrhus after operation. If this is a fact, he says, one is warranted in inferring that certain agents which are safe therapeutic remedies may be discovered to produce destructive effects upon morbid growths where these have established a habitat in a debilitated tissue. His experience during the past two years has fully confirmed this statement and inference, as a considerable number of instances have come under his observation where epithelioma of the cervix has completely disappeared under local treatment the object of which has been to promote a healthier condition of the organ, while this has been supplemented by the administration of thyreoid extract. The local treatment consists in removing by the curette all the unhealthy tissue that can be reached, and the application afterward at frequent intervals of tampons saturated with a ten-per-cent. solution of ichthyol in glycerin.

He does not say that in every case such treatment is followed by a favorable result, yet, in the majority of instances, where the disease is in its initial stage and has not involved any other tissue than the cervix itself, one may calculate upon a most encouraging result. It appears that this method of treatment contains all the elements of success which can be alleged for complete hysterectomy. In a few instances where the disease has actually proceeded beyond the sphere of surgical interference complete recovery has followed this method of treatment.

In studying what has been written on the pathology of cancer, says Dr. Bell, we find such a variety of opinion expressed that it is difficult to arrive at any accurate conclusion on the subject. It stands to reason, however, he remarks, that before cells depart from their normal and take on a malignant development, the subjacent tissue must have become enfeebled, and this fact would appear to have been recognized by pathologists, who have designated this enfeebled condition "pre-cancerous." Why it should receive this designation, says the author, it is difficult to comprehend, as it is not a necessity of this condition that cancer should supervene. His reason for taking exception to this is that by judicious treatment the unhealthy features can be removed and malignancy thereby averted. In epithelioma, for example, this debility may have acted as a stimulus to the lower-organized epithelium cells, which of themselves have been the direct result of the unhealthy mucous membrane. We are fully aware, he continues, that when the cell growth of either the epithelium or endothelium is excited by an irritant or by enfeeblement of the subjacent membranes, a remarkable proliferation of immature cells is the result, and these tend to be thrown off in considerable quantity, giving rise to catarrh. If the altered cells, however, are retained in closed follicles or in *culs-de-sacs* having a narrow calibre like those of the utricular glands, it is not difficult to conceive that they may become implanted on the surface of the glands and may proceed to a further pernicious development. They thus pass from a benign to a malignant state of existence and commence to prey upon their environment, and, after still further prostrating the already enfeebled tissue, progressively infiltrate it and manifest their character of malignancy.

Now, approaching the subject of diagnosis, one can not, he thinks, avoid being impressed by the great diversity of opinion which appears to exist on this point. Numerous instances are on record where eminent pathologists examining one specimen have differed in the conclusions arrived at after careful study. One has proclaimed a neoplasm to be malignant, while another affirms that the tumor is benign. One author protests against microscopic examination before operation, believing that the preliminary cutting of the tumor may cause a rapid change or an escape of cells that will infiltrate new tissue and perhaps be the cause of recurrence. He further insists that microscopic examination should be made after removal and recorded for future guidance. He goes on to remark that could surgeons see microscopically all the small tumors they have thrown away without examination, there would probably be a vastly greater percentage of malignant growths found among them than is generally supposed. *Per contra*, he is satisfied that a great many operations, especially upon the uterus, are performed for so-called malignant disease when this has no existence. One writer affirms that if the os is discovered to be eroded and redder than normal, with an unhealthy discharge escaping, and if this discharge is wiped away on a pledget of wool and observed to be purulent in its nature, and if it seems watery and perhaps blood-stained, the case is highly suspicious of cancer. Further, it is said that if the discharge has a faint disagreeable odor, and further examination with the uterine sound denotes that the canal is increased in length, and the manipulation of the instrument causes bleeding, we may be pretty certain that we have to deal with a cancerous uterus. For the purpose of making the diagnosis clearer, the writer cited recommends that the patient should be placed under an anæsthetic, the uterine canal fully dilated, and by means of the curette a scraping of the cavity be obtained for pathological examination. Here, however, he suggests that we may be beset with difficulties, these arising from the fact that a portion of healthy tissue may be removed, when of course the pathological report would be fallacious. (Dr. Bell states that if his dredge curette is employed in such circumstances no mistake of this nature could possibly arise.) But Dr. Bell maintains that if the microscopical search is still further proceeded with, by a thoroughly competent pathologist or pathologists, difficulties will still crop up to prevent one from arriving at a correct conclusion. His reason for making this statement is that when endometritis has existed for a lengthened period the endometrium becomes so altered in character (frequently assuming a granular or papillomatous condition) that it gives rise to all the symptoms above enumerated. Were these symptoms diagnostic of cancer, he should have treated innumerable cases of this dreadful disease with perfect success, and this without having recourse to anything further than the free employment of the curette followed by a few weeks of intra-uterine medication and constitutional treatment. There is one symptom, however, which has been enumerated, that he looks upon as almost pathognomonic of cancer of the uterus—namely, a persistent fœtid odor of the muco-purulent sanguineous or sanguineo-purulent discharge. Notwithstanding the fact that these symptoms may obtain, and, furthermore, that the patient has become cachectic and lost considerably in flesh, he holds that the disease is still amenable to treatment without having recourse to the serious operation of hysterectomy. Extensive observations on this subject have taught him that the only form of cancer which takes its origin in the uterus is epithelioma, and although he sees daily a considerable number of cases of uterine disease, he has never yet come across a case of malignant adenoma or of scirrhus affecting this organ. Yet it is recorded in a recent number of the *British Medical Journal* that one operator pronounced two out of three cases to be "scirrhus." Dr. Bell looks upon these as being instances of error in diagnosis; the probability is that they consisted of fibromatous interstitial nodules, which gave rise to the symptoms suggestive of cancer. If scirrhus was ever met with in the uterus, he would conclude that it had arisen from metastasis, and would therefore not be amenable to operation. He could quite as readily conceive of scirrhus appearing as a primary disease on the tongue, lips, or rectum.

The natural history of epithelioma, he says, differs materially from that of scirrhus; the former invariably attacks a tissue which has been debilitated by pre-existing disease, and in its structure is closely allied to the tissue from which it originates; scirrhus, on the other hand, manifests itself, in the majority of instances, in tissues where there has been an entire absence of indications which would lead one to prognosticate its advent. Moreover, there are sufficient grounds for supposing that scirrhus is the result of a transmigration of a cell or cells foreign to the part which is attacked. Epithelioma, therefore, would seem to be the result, in the first instance, of an aberrated condition of the matrix of the epithelium, the consequence being that abnormal instead of normal cells are generated, and their proliferation is increased *pro rata*. The same symptoms are manifested in myxœdema, which is invariably accompanied by metrorrhagia to a greater or lesser extent. When this disease is treated by means of thyreoid gland the epithelium is restored to health, and as a consequence the hæmorrhage ceases.

The relation which exists between the thyreoid body and the genital organs (if one is to credit Catulle's statement), says Dr. Bell, was well known to the ancients. It has also been demonstrated that pregnancy, when accompanied by hypertrophy of the thyreoid body, sometimes favors the regression of a pre-existing thyreoid tumor; Professor Charcot, having seen women affected with exophthalmic goître cured after pregnancy, did not fail to advise it, on therapeutic grounds, in the treatment of this painful affection. (Dr. Bell's experience, however, is that women suffering from goître have been less prone to become pregnant than other women.) The relationship between the thyreoid body and the uterus is affirmed in a more decisive manner by certain singular facts observed by Bouilly, Tuffier, Guinard, Picqué, and Bloch, these surgeons having had to operate on patients affected by fibroma of the uterus or salpingo-oophoritis in whom coexisted goîtres, some of which had previously resisted all treatment, have seen thyreoid tumors disappear, or at least be considerably diminished, after the extirpation of the pelvic organs.

If, now, continues Dr. Bell, we study the ætiology of cancer of the uterus, for example, we find among the predisposing causes all those which can contribute to depress the vitality of the organ. He refers especially to repeated attacks of metritis, but more especially to endometritis resulting from either idiopathic or traumatic causes. If we bear in mind, therefore, the pathological relationship of the thyreoid body to the womb, we may readily admit, he says, that the vitality of the latter may depend to a large extent on the integrity of the thyreoid function. One is much more inclined to favor this opinion when one studies the results which many authors have obtained who have had a large experience in the treatment of myxœdema, and who testify to the fact just stated, that their cases have been frequently accompanied by metrorrhagia. It is these considerations which prompted Dr. Bell in the first instance to treat cancer of the uterus by the ingestion of fresh thyreoid gland. It must be understood, however, he says, that the local treatment mentioned in the beginning of this article is not to be neglected. He does not maintain that this method of treatment is a panacea: what he maintains is that it is a remedy which deserves to be placed on record, and which will prove quite as reliable as the majority of remedies for other diseases. When the disease has been in its initial stage the results have been more than satisfactory, and in several instances, even where considerable inroads had been made and where a favorable result could hardly be expected, the parts have been restored to their normal condition. His argument is that where surgical interference can be of avail this therapeutic method of treatment is almost certain of success, so that the ultimate condition of the patient is very much more satisfactory than if hysterectomy had been performed, while all the risks and anxiety of the operation have been avoided.

The treatment of ovarian and tubal disease, as also that of fibroma of the uterus, by means of parotid and mammary gland has been suggested, he says, by the physiological relationship which exists between these organs. The effect of parotid gland upon a diseased ovary is so pronounced, especially if the uterine affection is simultaneously treated, that it would be wrong, in his opinion, not to employ this remedy before resorting to operation. During the past two years he has obtained most favorable results in over sixty cases of enlarged and painful ovaries which would certainly at one time have warranted oophorectomy. These women are at the present moment not only perfectly well and free from pain, but, what is equally satisfactory, they remain also in possession of their ovaries.

The Hæmospast.—In the *Medical Record* for July 10th, Dr. Veranus A. Moore, of the New York State Veterinary College, Cornell University, describes this device.

The extent, he says, to which the results obtained from blood examinations are being relied upon in making positive diagnoses renders improvement in the instruments for drawing even the little blood necessary for this purpose a matter worthy of attention. In addition to the examination of the blood by the physician for immediate assistance, it is being investigated more and more thoroughly in histological laboratories, and in determining the nature of many diseases the changes produced in the blood are receiving increased consideration. By any of the methods ordinarily used the procuring of fresh blood from the human subject for microscopic examination is somewhat clumsy and often annoying to the operator. Usually a surgical needle is employed, but with the anæmic and often nervous individual the sight of this simple implement, not to mention the making of the slight incision, causes much apprehension. This is especially true if it is necessary, as it sometimes is, to make two or more “stabs” before a sufficient flow of blood is obtained. In working with the smaller or experimental animals the task is less difficult, but even here the incision which is made with scalpel, bistoury, or scissors is unnecessarily long or deep. For the larger animals the spring fleam is very satisfactory, but it is not applicable for the smaller species or for the human subject.

The introduction of the hæmatocrite, for the determination of the number of red blood-corpuscles, necessitates a slightly larger quantity of blood for each examination than was required for the counting apparatus, and consequently aggravates the difficulties, by the present methods, of procuring the required amount. The desire for an instrument with which the incision could be made instantly, and the depth of the cut accurately regulated, led him to make several experiments in the construction of an apparatus possessed of these qualities. The outcome was a spring needle lancet which works admirably and which has completely removed the difficulties attending the use of the surgical needle or bistoury.

The hæmospast consists of a metal tube (he has used brass) about five centimetres long and one centimetre in diameter, with the upper end closed and the lower one covered with a perforated screw cap which has a terminal regulator in the form of a smaller perforated cap. A narrow slot, three centimetres long, is cut in one side of the tube, beginning half a centimetre from the lower end. In the upper part of the tube is a piece of coiled wire spring of sufficient strength to give the necessary force to a cylindrical plunger, carrying the needle, which is placed next to it in the lower part of the tube. The plunger rests against the cap. The incision is made with a triangular-pointed needle constructed with a shoulder, for convenience in handling, which screws into the lower end of the plunger. From the side of the plunger projects a trigger which moves in the slot and with which the plunger is pushed up. When set, the trigger is easily caught, by a slight twisting movement, into a notch near the upper end of the slot. By means of the regulator the length of the projecting part of the needle can easily be adjusted. When the spring is set the needle is hidden entirely from sight, so that if the instrument is exposed to view it does not suggest an implement of torture. In use it is convenient and easily handled. After the finger or other part is cleansed, and when the incision is to be made, the instrument is pressed gently on the part, the trigger is touched, and the incision of exactly the depth desired is instantly made. As soon as it has been sprung, the hæmospast can be dropped and the collection of the blood begun.

This instrument is, he says, much more convenient in procuring small quantities of blood from experimental and other animals than those which he has heretofore observed, and equally efficient. As it is made entirely of metal, it can be sterilized in any of the germicides used in disinfecting surgical instruments or by dry heat. If desired, it can be made larger and stronger, with needles of various sizes, and, if preferred, with a cutting edge a millimetre or more in length. It is available, therefore, for workers in laboratories where normal human blood or that of healthy or diseased animals is being studied, as well as for the practising physician.

Pleasure without Other Sensations.—E. W. Scripture, Ph. D. (Leipsic), of Yale University, has sent us the following: “While exploring the sensations of various parts of the body about a year ago, I chanced to notice a phenomenon of which I find no mention in the various physiologies and psychologies. I submit the brief statement in the hope of learning if any one has previously made a similar observation or if the fact which I have repeatedly observed can be confirmed by physicians who have the possibility of testing large numbers of patients. The observation may be summed up as follows: Whereas the surface of the glans penis is moderately sensitive to the pointed end of a toothpick and responds strongly to the point of a pin, the mucous membrane around the orifice of the urethra is absolutely lacking in sensations of touch in either case, although strong pressure with the point of a pin will cause pain. There is, however, another sensation aroused by the application of any object to this mucous membrane—namely, that of pleasure—which increases directly with the degree of erection. The confirmation of this observation would establish the hitherto unrecognized fact of the separate existence of pleasure as an independent sensation, a fact of considerable importance in the psychology of feeling.”

The Treatment of Headache.—A chapter on this subject, by Dr. Franz Windscheid, of Leipsic, is quoted in the *Medicinisch-chirurgisches Central-Blatt* for May 21st from a work entitled *Sammlung und Abhandlungen über Nerven- und Geisteskrankheiten* (Halle: K. Marhold, 1897). The following is the substance of what Dr. Windscheid says: In no ailment must the causal indication be so closely adhered to as in headache; there is therefore no peculiar or specific treatment for it, with the exception perhaps of certain forms of neuralgia.

Since the treatment of headache is that of the fundamental disease on which it depends, it can not be considered exhaustively in an essay of this sort; attention can be given only to things having the most intimate connection with headache, and the reader is referred to the text-books for all else.

Neurasthenic and *hysterical* headaches may be grouped together. Their treatment often requires the greatest patience on the part of both the physician and the patient, and frequently, it must be admitted, is fruitless, since we can not do away with the causes on which they depend, such as family cares, overexertion to make a living, etc.

Medicinal, mechanico-physical, and psychical means have to be employed, also balneological and climatic treatment. Among drugs, potassium bromide, fifteen grains in seltzer water three times a day, plays the chief part. It must be taken for at least three months. A good combination also is that of quinine with strychnine, as a tonic to the nervous system, in some such form as the following:

℞ Compound tincture of cinchona.... 20 parts;
Tincture of nux vomica.......... 10 “
M. S.: Fifteen drops three times a day.

Anæmic headaches occurring in cases of neurasthenia are of course to be treated with iron. The recognized antineuralgics have for the most part no great effect in neurasthenic or hysterical headache.

The mechanico-physical treatment may begin with a careful course of massage, which will be of particularly good service in cases in which the patient leads a sedentary life and does severe mental work. But massage must not be employed to excess. Then hydropathic treatment is to be recommended, kept within bounds indicated by the peculiarities of individual patients. Cold rubbing down, sitz baths, and packing with frictions may be employed. The swimming bath is good, but it should not be too prolonged, and the patient should be forbidden to dive head first into the water. Together with the cold bath, warm baths often have a very good effect, especially the pine-needle bath, which may very easily be managed at home by adding from eight to ten ounces of pine-needle extract to enough water for a full bath at a temperature of 80° F. The bath may last for ten minutes and may be taken every second or third day. Good service is often rendered by warm foot-baths taken at bedtime.

Electrical treatment should always be employed in cases of neurasthenic or hysterical headache of long standing, but at the outset, in order to prevent disappointment, the patient should be told that, while it sometimes causes decided amelioration, it fails altogether in many cases. It is best to pass the current, not exceeding from 0.5 to 0.75 milliampère, through the head for not more than five minutes at a time with the negative electrode on the back of the neck and the positive, in the form of a soft sponge, on the forehead, and the current should be turned on and off slowly and carefully. The application may be repeated daily for several weeks. The author has never seen any great results from the so-called galvanization of the neck. Why it is that galvanization varies so in its action we can not explain. It is plausible to suppose that suggestion plays a certain part in producing the benefit that often results; on the other hand, we can not exclude the possibility of an influence on the circulation in the brain. The faradaic current is suitable for the treatment of headache only in the form of general faradization, and it is preferable to use the hand as an electrode.

As regards psychical treatment, it can not be denied that a great many headaches have been influenced most favorably by hypnotism, but it has also failed in numerous instances, and of its failures we usually hear nothing. It is not suited to all patients or to all physicians, and in no case should it be regarded as the sole means of curing headache.

The balneological and climatic treatment should not be lost sight of in cases in which the patient's circumstances admit of its employment. Persons affected with neurasthenic or hysterical headache are often very much benefited by change of air, as it is called, but apparently less by the new air than by relief from unwholesome business and family relations. Nevertheless, of course, a certain rôle must always be ascribed to the air itself. The question that the physician usually has to decide is Sea or mountain? The author is inclined to prefer a mountainous region for neurasthenic and hysterical persons with headache, but he warns the reader against too great altitudes, for they may irritate the brain instead of soothing it. The chief point is to get a good forest air and not too much sunlight, to which such patients are generally sensitive. He has often seen great irritation produced at the seaside, especially on the German Ocean. Some persons, however, are very much benefited by the sea air; it is a matter of idiosyncrasy.

The headaches of *meningitis, hydrocephalus,* and *tumors of the brain* are susceptible to no other treatment than that of the disease on which they depend.

Headache due to *circulatory disturbances in the brain* is to be combated by avoiding all sources of cerebral anæmia or hyperæmia, as the case may be. Since, however, the diagnosis of anæmia and hyperæmia of the brain is difficult to make, the treatment presents corresponding difficulties. Diseases that give rise to cerebral hyperæmia, especially those of the heart and lungs, often have to be treated energetically. In cases of headache due to arteriosclerosis we have to look carefully to the avoidance of everything calculated to occasion cerebral hyperæmia, for that distinctly aggravates the headache. We should proscribe alcohol, coffee, tea, and tobacco, lay out a quiet and uniform course of life, and warn the patient against overexertion of the slightest form, such as fast walking, sudden stooping, and going up stairs hastily. A warm foot-bath may be taken at bedtime, and we may order the following:

℞ Potassium iodide................	1 part;
Water	30 parts.

M. S.: A tablespoonful three times a day.

The patient must be particularly warned not to go to too high a resort in summer, for in such a place the danger of apoplexy is increased.

In the treatment of *neuralgic* headache the causal indication is the prominent one in all cases. According to the ætiology, we must order the removal of foreign bodies, the excision of cicatrices, or the extraction of carious teeth, and under certain circumstances have the condition of the organs of special sense inquired into by the oculist, the rhinologist, or the otologist. If there is reason to suspect syphilis, we must order treatment accordingly. If there is a history of previous malarial trouble, we must try quinine; malarial neuralgia often proclaims itself by as regular a periodicity as that of malarial fever itself. Quinine should be given five or six hours before the expected attack, in doses of from twenty to thirty grains, for smaller ones will have no effect. In some cases the patient must even be waked from sleep to take the quinine, and he will submit to this quite willingly if he knows that it will bring him a morning free from pain.

If anæmia is the cause of the neuralgia, the appropriate treatment with iron, milk, etc., is to be ordered. Besides these remedies which act on the disease that lies at the root of the neuralgia, there are others that act directly on the neuralgia itself. Electricity is sometimes of considerable use. In cases in which there are points of tenderness on pressure stabile applications of the galvanic current of from five to ten minutes' duration may be made, a small electrode, preferably Erb's normal electrode, being held upon the tender point and the current carefully turned on and off. Too little stress is laid in the text-books on the necessity of not using too strong a current; it is not wise to employ more than 0.5 milliampère. Then labile applications may be made to painful cutaneous areas; for example, in neuralgia of the first branch of the trigeminus, on the forehead and over the eye. Finally, pencilling these areas with the faradaic current may be practised, a procedure very much to be recommended, one that often directly relieves the pain. The results of the electrical treatment of neuralgia are enormously varied, just as different persons react so differently to electricity.

Among analgetics, it is particularly morphine that should not be spared in trigeminal neuralgia. The patient, racked with fearful pain, rightly clamors for its alleviation. We can not hesitate over questions of the harm it may do; it is our plain duty to allay the pain, and for that purpose in severe cases nothing is so good as morphine, and it is best to give it subcutaneously. But never should the syringe be given into the patient's own hand if there is the slightest addiction to morphine. The substitutes for morphine in the form of injections of atropine, antipyrine, or codeine are generally of no great value, and antipyrine has the special disadvantages of causing great pain at the site of the injection and of readily leading to abscesses.

Of the internal antineuralgics, the best known are acetanilide, antipyrine, and phenacetine, which are about alike in efficiency, but not in price or in dangerous qualities. The cheapest, but also the most dangerous, is unquestionably acetanilide. The dose, in the author's opinion, should not exceed four grains, at least on the first occasion. Antipyrine, which costs fifty times as much, generally works very well, but in many persons gives rise to gastric troubles and cutaneous eruptions. Phenacetine is about midway between the two others in price as well as in its unpleasant effects.

Of the older remedies, quinine may be given in doses of from five to eight grains several times a day, sodium salicylate in doses of from fifteen to twenty-two grains, and caffeine natro-salicylate in doses of from three to eight grains. The salicyl preparations are particularly to be recommended in cases that are not of long standing.

Derivatives are not to be despised in severe neuralgic headache—either a mustard plaster on the neck or behind the ear, inunction with strong spirituous preparations, or cupping and leeching, for under some circumstances they are quite effectual. Inunctions with anodyne ointments, such as those of veratrine, aconitine, and opium, which were formerly in vogue, are now but little used, for we know nothing positive of their efficacy. The most that can be said of veratrine is that it acts as a direct anodyne on the sensitive nerve terminations.

Benefit may occasionally be obtained from local anæsthetics, best employed in the form of a spray. Sulphuric ether, methyl chloride, methylene chloride, etc., may be mentioned. They all act momentarily by reason of the great cold which they produce, but they are sometimes of service, and patients may be trusted with them if they are warned to cover the eye with wadding so as to prevent the spray from touching the conjunctiva, in which it would cause an intense burning pain and even cauterization. Frictions with menthol act by producing local anæsthesia.

There is no specific against trigeminal neuralgia. Butyl chloral, gelsemium, and other drugs formerly so considered have now fallen into disuse. Arsenic may be called a specific in so far as its general tonic action on the nervous system is concerned, and there are cases in which it is best to give Fowler's solution freely for a time.

It is a question if the mechanical treatment of trigeminal neuralgia, recently advocated warmly by Nägele, consisting of various manipulations of the head and neck, is not really a form of suggestion.

The last resort in severe neuralgia, especially of the trigeminus, is to a surgical operation, and most patients are unwilling to consent to that. We may choose between nerve-stretching and the tearing out of the nerve or its twisting out after the manner of Thiersch. Along with some very good results of these procedures there are failures also, and we should never promise the patient an absolute success.

Removal of the Gasserian ganglion is a measure calling for a certain degree of heroism on the part of the patient.

The treatment of *migraine* is very fruitless and thankless. It can not be denied that, notwithstanding the numerous remedies that have been recommended, there is none than can be relied on. The newly exploited migrainin, a mixture of antipyrine, citric acid, and caffeine, sometimes has a mitigating effect, but is not entitled to be called a specific. The long list of so-called antineuralgics may be tried, also the long-continued use of potassium bromide, as described in the paragraphs on neurasthenic headache. The chief thing in the treatment of migraine is that the patient should lead a carefully regulated life, avoiding all excesses and indulgences that are found to bring on an attack. Massage, hydrotherapeutics, and electricity may be tried; even if they act only by suggestion, they may accomplish the object. In migraine, too, we should seek for some underlying disease of the digestive tract, the genital apparatus, the organs of special sense, etc., and treat any that may be found.

Traumatic headache sometimes calls for a surgical operation, especially if there is cicatricial tissue or a splinter of bone pressing on the brain. The headache of the traumatic neuroses falls under the same head as the neurasthenic and hysterical headache.

Headache due to *affections of the organs of special sense* demands treatment by a specialist in most cases, but it is the most promising form. No false pride should stand in the way of the practitioner's turning the patient over to the specialist in case any disease of the eye, nose, or ear is discovered.

The *digestive diseases* that give rise to headache must be treated on general principles. It is particularly necessary to overcome constipation.

In *rheumatism of the scalp* we may use either massage or the antirrheumatics, salicyl, antipyrine, salipyrine, etc. A vapor bath often does very good service, and it may be taken at home in bed.

Creolin Injections in Dysentery.—*Treatment* for June 24th publishes the following case, which was reported in the *London Hospital Gazette*, vol. iv, No. 1, by Mr. A. B. Fry and Mr. H. S. Basden, as illustration of the satisfactory results of the use of creolin: The patient was admitted into the London Hospital on January 9th in an absolutely prostrated condition. Emaciation was extreme, and the abdomen was so hollow and retracted that the outline of the aorta and the separate vertebræ and their intervertebral discs could be distinctly made out. The tongue was dry, and the pulse and the heart sounds were weak. Diarrhœa was frequent, and the stools were very offensive and of a deep chocolate color; they generally contained sloughs and shreds of intestinal mucous membrane and occasionally bright blood. Rectal examination proved the existence of severe hæmorrhoids and a fistula. The patient was given fifteen grains of pulverized ipecac every night, and every four hours a mixture of bismuth and opium; night and morning a ten-ounce enema of a solution of silver nitrate, in the proportion of one grain to an ounce of water, was given.

On January 15th there was very little change in the condition, except that there was less blood in the stools. An enema consisting of a drachm of pulverized ipecac and fifteen minims of tincture of opium, with ten ounces of starch enema added, was given night and morning. On the 25th the appetite was better and the enemata were again changed. A pint and a half of the silver-nitrate solution of the same strength was given at night, and an ipecac enema in the morning. Sulphocarbolate of sodium, at first fifteen grains and then thirty grains three times a day, was given instead of the bismuth and opium.

On February 8th the appetite was ravenous and the patient appeared stronger. The silver-nitrate enemata were increased in strength to two grains and then to three grains in the same quantity of water. The stools were less offensive and were quite free from blood. This treatment was continued until March 17th, when a one-per-cent. solution of creolin was used, a pint and a half being injected night and morning. It was noticed that the sulphocarbolate of sodium instantly diminished the offensiveness of the stools.

Very rapid improvement, says the writer, was made with the creolin enemata; the offensive character of the stools soon disappeared, and the diarrhœa became much less.

On April 10th the evening enema was discontinued, and three weeks later the morning enema also, as by this time the intestinal contents appeared to be quite healthy in all respects. On admission the patient's weight was ninety-seven pounds; on May 17th it was a hundred and twenty-two pounds.

The Uric-acid Diathesis.—In the July number of the *Edinburgh Medical Journal* there is an article on this subject by Dr. Alexander Haig, who states his disbelief in the uric-acid diathesis and asks, Shall we continue to believe in a supposed tendency to excessive formation of uric acid, or shall we look and see that excess of uric acid in the body, and all the diseases to which it gives rise, can be quite as well accounted for by the gradual accumulation of the quantities daily swallowed in the food, which can be easily demonstrated without any hypothesis?

Concerning the expression uric-acid diathesis, Dr. Haig says that we might almost as well talk of a strychnine or a belladonna diathesis, because the administration of such drugs gives rise to certain well-known symptoms. Uric acid, like them, he says, is an extremely toxic substance, and its administration always produces certain definite symptoms, and so long as diet, with its constant daily introduction, remains unaltered, the "diathesis," of course, he says, remains incurable.

The effects produced by administering uric acid are at first pleasant and stimulating, and its later unpleasant depressing effects have only too often been completely overlooked or credited to other things; and, owing to the mistaken notion, he continues, that uric acid could not be introduced into the body, no symptoms have been expected to follow its ingestion. The symptoms, however, he thinks, are clear enough when looked for, so that, if uric acid is not toxic, there must be a new definition of toxicity; and that definition, he adds, will exclude most of the drugs in the pharmacopœia.

On the other hand, the author goes on to say, it is easy to see, when we consider for a moment, that uric acid is introduced into the body in the dead tissue of all animals, their extracts and decoctions, and in the alkaloids of tea, coffee, and cocoa; that men vary enormously in the quantities of these substances they consume; and when we reflect that the amount of uric acid that will be retained from this introduction varies to a great extent with such factors as exercise, clothing, temperature, and climate, we can see at once many reasons why the results of flesh-eating and tea-drinking should differ greatly in different people; although the difference is often more apparent than real. Dr. Haig is convinced that no one can continue to swallow these substances for many years with impunity.

For these reasons he believes it is foolish to say, when an adult in some condition of disease excretes daily a decided excess of uric acid, that he forms an excess of uric acid; we must first look and see that the common causes of such excessive excretion—namely, introduction over a long series of years, conjoined with more or less deficient excretion—have not been in action; and only in the complete absence of these common causes can the assumption of a plus formation of uric acid be justified.

A man may have too much uric acid, just as he may have too much urea, from consuming an excess of nitrogenous food. Dr. Haig does not doubt, however, that the introduction of ready-formed uric acid is by far the larger and more important factor in the causation of disease.

The author wishes it understood that he does not ask the profession to believe there is no such thing as the uric-acid diathesis, simply because he says so; still less does he ask their belief in its existence. The better course is to put the matter to the test of experiment and judge by the results.

When, he says, a patient who passes a constant excess of uric acid, with or without gravel or calculus, and suffers at the same time from high blood pressure, headache, mental depression, sleeplessness, frequent bilious attacks, with anæmia, myalgia, arthritis, and other secondary symptoms, is put on a diet which introduces no uric acid; and at the end of a year or eighteen months, when the uric acid previously stored in his body has had time to be eliminated, and all the signs and symptoms are steadily and completely absent—and this is seen not in one case here and there, but in every case in which diet is properly attended to—then it will be agreed that the uric-acid diathesis is a myth.

His own experience in the matter is, he says, absolutely convincing; and he feels sure that those who will take the trouble to test the point for themselves will soon see clearly that all that has to be done to obtain immunity from the so-called uric-acid diathesis is to give up the bad habit of swallowing uric acid.

The Necessity of Special Institutions for the Treatment of Pulmonary Tuberculosis.—This was the subject of a paper which was read by Dr. A. C. Klebs at the recent meeting of the Tri-State Medical Society of Iowa, Illinois, and Missouri, and published in the *Tri-State Medical Journal and Practitioner* for May. The author urges the formation of these special institutions, which, he says, are the best and most practical schools for the treatment of pulmonary tuberculosis, as the sanatoria abroad and the few in this country have already demonstrated by their beneficial influence.

Such institutions, provided that they fulfill all requirements, have a beneficial influence, not only by the successful treatment carried out in them, but, in a general way, more by the training of a number of patients, who, mingling again with the public, help to propagate the correct ideas about the disease and its prevention and treatment. The great advantage, he says, which the sanatorium treatment has over all others is the possibility of supervising the mode of life of the patients; consequently there is almost always a guarantee that the prescriptions will be carried out. The hygienic-dietetic plan, which, he thinks, should occupy the first position in the treatment in such institutions, demands constant supervision. Tuberculous patients are very forgetful and need reminding daily. The methods adapted to the individual require an exact knowledge of the patient's physical condition as well as his general disposition, and the physician in such an institution can ascertain this easily.

In this country, continues the author, it is but lately that the importance of special institutions has provoked general interest, and it is chiefly through the indefatigable efforts of Dr. Trudeau in the Saranac Sanatorium that the importance of such institutions has received some attention. Dr. Klebs has no doubt that, owing to the progress which is being made in practical medical education and hygiene, a general movement toward the effective preventive and curative treatment of this dreaded disease will be made. The objection has often been raised, he says, that the association of a great number of affected persons in special institutions is a danger not only for the patients themselves but for the immediate surroundings. This objection, however, has become void, since it has been conclusively proved that the danger of infection in such institutions, provided they are well equipped and properly managed, is entirely avoidable, and in every case much less than the one which is constantly threatening in public buildings, hotels, schools, railway depots, railroad cars, ships, etc., where the dangerous factor of infection, expectoration, is not properly taken care of. By proper measures, he continues, a separation of progressing cases can be made possible, especially by the adoption of the cottage plan, which has been introduced by Dr. Trudeau, and has given such excellent results, especially in the treatment of incipient cases. More advanced cases have to be treated in such buildings which offer greater facilities for the strictest supervision, and often results can be obtained where, seemingly, no hope is left. The alleged disadvantages are not to be compared to the great advantages regarding the benefit of the patients themselves, and the spread of healthy and correct ideas about the disease and its treatment.

It is obvious, the author goes on to say, that, in order to get the best possible results in the construction and management, certain requirements have to be strictly fulfilled. Penzold gives in his masterly treatise on the subject the rules which have to be adhered to, in order to fulfill all necessary requirements. His points are: Favorable situation in pure air, protection from winds, near mountains and forests, amid gardens or parks, hygienic conditions of buildings in respect to the situation of rooms, ventilation, heating, etc.; comfortable opportunities for rest out of doors (special galleries, verandas, and balconies, for this purpose); absolute cleanliness, especially in regard to expectoration, and excellent cuisine and dairy; direction of the institution by an energetic physician, who is well trained in every respect, but especially in phthisico-therapy, and who has absolute personal authority over the patients; well-trained assistants —physicians in sufficient numbers and well-trained nurses; removal from home surroundings; impossibility of all excesses; and exclusion of intercurrent complications.

The combination of these different requirements produces satisfactory and lasting effects, and special institutions enable, in the most thorough way, the carrying out of a combination of different therapeutic measures, which can not be done to the same extent at home. The nature of the disease demands the most careful consideration of details, both mentally and physically. Much, of course, depends on the capacity of the directing physician; on his energy and tact. The work, if it is carried out properly, demands seriousness, perseverance, and energy from those connected with it.

Dr. Klebs gives a brief account of the treatment carried out in the sanatorium in Citronelle, Alabama, and states that the strength of the community has favored marvelous accomplishments in a short time, and that it will not allow the decrease of this strength by its worst enemy, tuberculosis, and that it will combat the disease by united forces acting in the best direction.

The Pernicious Influence of the Corset.—Dr. Hirsch, in the *Frauenarzt*, April, 1897 (*Indépendance médicale*, June 23d), states that in many young girls chlorosis would not assume so grave a character if they were not subjected to the pernicious habit of wearing corsets. The best iron baths will have no effect whatever if the body is habitually squeezed into a corset. It is useless to induce deep respiration by bathing if, after the bath, free respiration is to be hindered by a corset. Of what use is it, the author asks, to excite the appetite if the stomach is squeezed? The defect in respiration results in troubles of the circulation as well as in cardiac obstructions and disturbances. Dr. Hirsch thinks the corset should be abandoned; that a "wasp-waist" is no longer considered the ideal of beauty; and that we may become accustomed to another form. The knowledge of having a healthy body should facilitate the adoption of the new mode of dressing. Then it will be found that the intensity and duration of chlorosis will diminish, for gymnastic exercises and games have no value unless the body is able to move freely and without restraint. Then it will become so strong and erect that it will not be necessary to resort to a corset.

What to Do with the Waste Water of a Country House.—In an article on this subject in the *Journal of the American Medical Association* for July 3d, Dr. Harvey B. Bashore remarks that in England, where much attention is paid to the subject of draining isolated houses, the general opinion seems to be that some form of surface drain is the best. Professor Poore, he says, described one which consisted of a perforated tin roof gutter suspended over the garden bed. Another way is to dig a gutter about a foot deep and a foot or two in width. This, being properly graded, is lined with round river stones or cobble stones, such as are used for making street gutters, and connected by a tin or galvanized iron pipe to the slop bowl, kitchen sink, or bath. Dr. Bashore says this is probably the cheapest, most durable, and most efficient drain that can be made, and as the waste pipe opens into the drain above ground, there is no need of a trap. In some places, however, on account of lack of suitable land, a surface drain may not be practicable, and we have to resort to a subsoil drain, which may be made by digging a trench about two feet deep and twenty feet long, supposing the drain to be from the kitchen sink for a family of four or five. The bottom of the trench must be graded so that there is a fall of something like five inches in the twenty feet, then a narrow board is placed in the bottom and on this tiles are laid with their ends half an inch apart. Then broken stones or coarse siftings of ashes, etc., are to be thrown in about the tiles and the trench filled with earth. Connect the sink and the drain with a lead pipe at one end, and at the other end a similar pipe led to the surface, and allow a free circulation of air through the drain—a very important point. These subsoil drains, although rarely causing much odor in the room, should be trapped as a precautionary measure. The waste from the bath may be disposed of in the same manner. For the disposal of the bedroom slops, a slop bowl connected to the same drain may be placed in the bath room, or wherever most convenient.

For the disposal of sewage from isolated houses, the author continues, the only method is some form of surface irrigation modeled after the large city plants. A suitable locality should be chosen, on which there is sufficient slope, and a shallow tank should be built; from this tank a gutter should extend through the field, and from this distributing gutters should run in the direction in which the sewage is desired to flow. The tank, of course, should be managed with an automatic flush and be discharged intermittently. If for any reason a surface tank would not be desirable, one may be constructed under the ground, if there is sufficient slope for its outlet. The absorptive field should be planted with corn and not with vegetables.

Spinal Irritation.—According to Dr. Hugh T. Patrick, in the July number of *Medicine*, the term "spinal irritation" should be absolutely banished from medical nomenclature. The pain and tenderness along the spine which, he says, are commonly known by this name, have nothing to do with the spinal cord or its membranes or with the spinal column. He thinks there is still a tendency, even on the part of prominent members of the profession, to consider the pain and sensitiveness along the spine that are so exceedingly frequent in nervous persons as a morbid entity or a distinct unit in the group of conditions that constitute a case of neurasthenia, hysteria, or hypochondria; or they are considered as a complication of the case. At any rate, he says, it is concluded that there is something wrong, whether it is functional or organic, in the spinal cord or the spinal column, or in the nerves at this level, or in all three. There are also, he adds, numerous cases, in his experience principally of traumatic origin, in which the presence of pain and tenderness in the back, often with more or less rigidity and weakness, is itself the only reason for the false conclusion that there must be some grave affection of the nerve structures.

Dr. Patrick remarks that his object in presenting this subject is to insist that so-called spinal irritation is not due to congestion or anæmia of the spinal cord, to a state of altered nutrition in the cord, to a neurosis of the spinal arteries, to a thickening of the spinal membranes, to exhaustion of the gray matter of the cord, to an affection of the nerve roots or nerve trunks, to thickening or irritation of the vertebræ, to irritation of the spinal ganglia, or to any other permanent condition or process in the back whatsoever.

Concerning the pathological condition, he says: In any case of so-called spinal irritation the tender point or points are ever present and can, as a rule, be definitely located, if the examiner exercises a little pains. Even when there is diffuse hyperæsthesia—more properly speaking hyperalgesia—along the entire spine, spots of maximum tenderness will be found. Having definitely determined—as gently as possible—that certain points are decidedly more sensitive than the surrounding area, they are lightly marked with a soft pencil and the examination is then directed elsewhere—chest, abdomen, extremities, etc.—for five or ten minutes. The same procedure of locating the painful places is then repeated. The examiner may begin at the top of the spine and slowly pass downward, or at the sacrum and upward, pressing the rubber pencil-tip at intervals of about half an inch, or he may press in a hit-and-miss way all over the back, touching occasionally the points formerly tender and the area about them. Supposing he starts from above, it will ordinarily be found that the tenderness (like the selected spot in the normal individual) moves upward to meet the progressing pencil and will be found situated from three fourths of an inch to two inches higher than before, while the point formerly tender will now be no more sensitive to pressure than its surrounding area. Occasionally the point will have moved farther down, and by way of exception it may be found in the same place. The tenderness could not be due to anything abnormal at the place of "irritation" (*i. e.*, the tender spot), else pressure the second time on the same spot would be just as painful as the first time, and, furthermore, we can not possibly suppose a pathological condition to have developed within the short space of five or ten minutes at the place to which the hyperalgesia shifted—*i. e.*, the second painful point. Bearing this in mind and remembering that the shifting corresponds just about to that in the healthy individual, it seems reasonable to conclude that it is due to the same cause—that is, the lack of absolute accuracy of the sensorium. In the pathological case, however, the shifting involves the sudden disappearance of pain from one place and its appearance in another. The inference, then, is inevitable that the pain on pressure is itself due to the perverted mechanism of sensory reception and registration in the brain, or, what is much more likely, to a perverted reaction of still higher centres—constituting a vicious consciousness.

Dr. Patrick's conclusions, which he says are not entirely without exception, are as follows: 1. In so-called spinal irritation there are tender points along the spine. 2. These points can be definitely located. 3. It can be shown that they absolutely change position within five or ten minutes. 4. Such shifting demonstrates that the disease, so far as the tender points are concerned, is entirely functional and situated no lower than the cerebral cortex.

After citing a number of illustrative cases Dr. Patrick calls attention to the very bad effect that a proclaimed diagnosis of spinal irritation may have on a nervous person, who may be convinced that he is the victim of some incurable disease. It has been the author's experience more than once to see the patient much more troubled by the supposed existence of some indefinitely terrible condition that the term spinal irritation conveyed to him than by various aches and pains, etc.

Dr. Patrick also adds very emphatically: First, that the presence of tenderness of the back with shifting sensitive spots, although indicating a functional nervous affection located entirely in the cerebrum, does not in any way preclude the presence, in addition, of organic disease of the brain, spinal cord, or any other viscus; second, that the almost instantaneous disappearance of tenderness from one point and its simultaneous appearance at another is not of itself proof of simulation, malingering, or nervous nonsense on the part of the patient.

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Original Communications.

SOME PRODUCTS OF THE TUBERCULOSIS BACILLUS AND THE TREATMENT OF EXPERIMENTAL TUBERCULOSIS WITH ANTITOXIC SERUM.*

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So much has been written in regard to the poisons of the tuberculosis bacillus that a review on this occasion would demand too much time, and we desire to refer only briefly to the work which is of importance in connection with those substances which we shall describe.

Tuberculin, as is well known, is the extract of the tuberculosis bacilli, including the media upon which they are grown. From specially prepared artificial cultures of the tuberculosis germ, Kühne (1) and the writer (2) (*Bulletin No. 7,* Bureau of Animal Industry) have obtained a substance corresponding to a nucleoalbumin, which appeared to be the fever-producing principle of the germ. However, many conditions in tuberculosis were not accounted for by this substance, and as Mafucci (3), Prudden and Hodenpyl (4), Vissman (5), and others had succeeded in producing tuberculous nodules without necrosis by the intravenous injection of dead bacilli, it seemed as though it should be possible to isolate, either from cultures or from bodies of the bacilli themselves, some substance which might be considered accountable for the coagulation necrosis of tissue which takes place, a necrosis which it appears is necessary for the progress of the disease. This problem was undertaken by us more than two years ago. After many fruitless attempts we succeeded in isolating from artificial liquid cultures a crystalline substance having a melting point of 161° to 164° C., readily soluble in ether, alcohol, and water, which separated from these solutions in needlelike or prismatic crystals showing a slight yellow tint (Plate 1, Fig. 1). They did not give the biuret reaction. The solution of this substance has an acid reaction to litmus, is acid in taste, and is optically inactive. The crystals give no precipitate with silver nitrate ($AgNO_3$), platinum chloride ($PtCl_4$), or barium hydrate ($Ba(OH)_2$). The analysis showed C = 50.88 per cent., H = 6.70 per cent., O = 42.42 per cent., giving a formula corresponding closely to $C_7H_{10}O_4$. This is the formula of teraconic acid, an unsaturated acid of the fatty series.

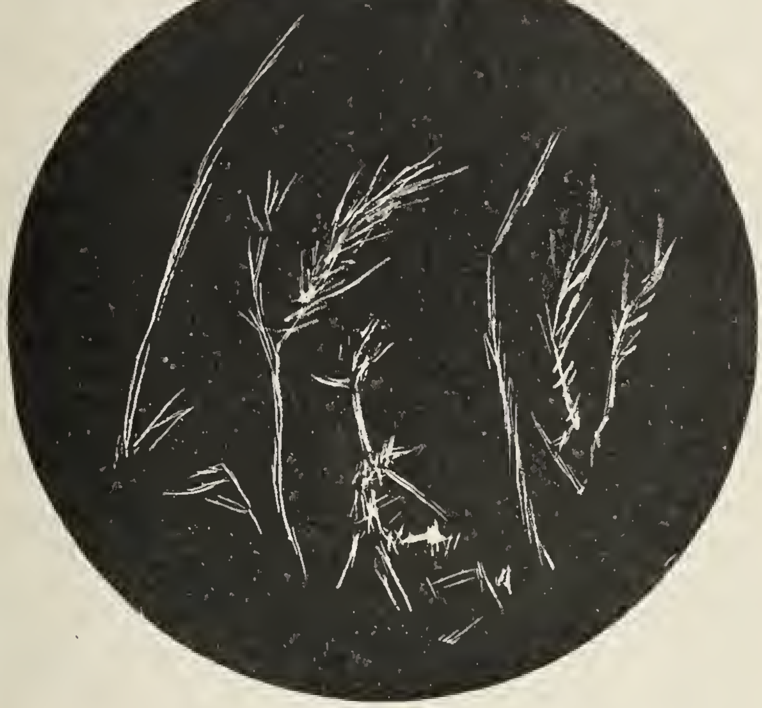

Fig. 1.

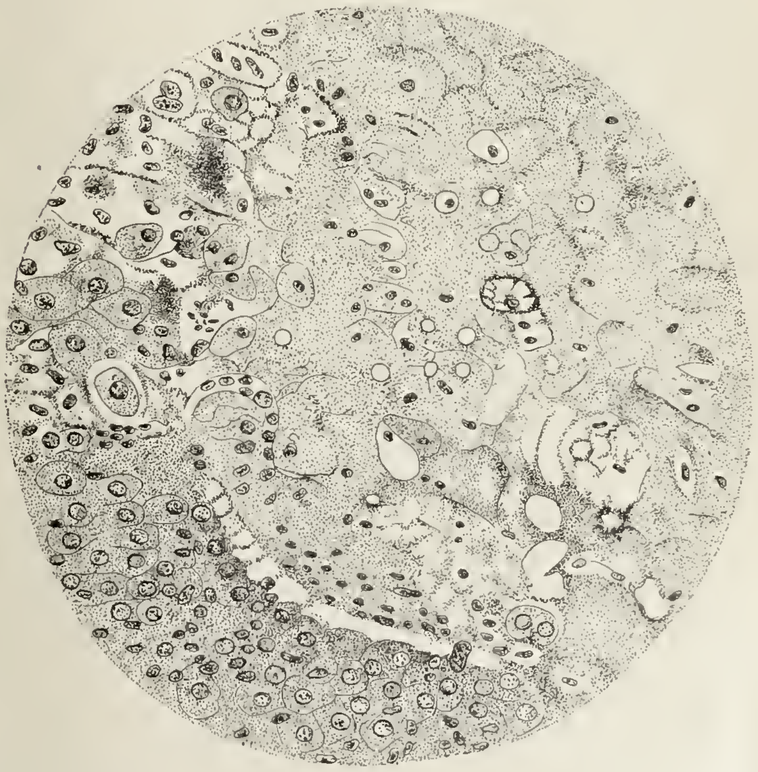

Fig. 2.

The culture medium upon which the bacilli were grown, and from which these crystals were obtained, contained potassium acid phosphate, ammonium phosphate, asparagin, and glycerin, the medium used and described by one of us (de Schweinitz) (6) some years ago for studying their products. After the growth on this media continues for some weeks the liquid becomes light yellow in color, having the appearance of a pale urine, a change which does not take place in the uninoculated medium kept under the same conditions. Efforts to obtain this same acid from the ordinary beef-broth cultures containing peptone and glycerin resulted in securing minute amounts of the crystals only, which it was never possible to purify. After noting some of the other properties of this acid substance we came to the conclusion that the presence of peptone and the nitrogenous bases of the meat resulted in their combination with the crystals, forming compounds from which the acid could not again be easily extracted, even after the addition of acid. Finally, a small quantity of the crystalline substance obtained from the artificial cultures was added to the glycerin peptonized beef-broth medium, but it was impossible to recover it again by the methods used for the first extraction—viz., repeated precipitation with alcohol and extraction with water and ether. The ready solubility of this substance in water, as well as ether, probably accounts for the difficulty of obtaining it. The uninoculated medium did not yield these crystals. When dissolved in water and injected into guinea-pigs the following effects were noted:

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I. *Healthy Guinea-pigs.*—No. 314. Received 0.015 gramme crystals. Temperature at time of injection, 102.6° F.; temperature at 11.50 A. M. (one hour after), 100.6° F.; temperature at 1.30 P. M., 100.2° F.; temperature at 3 P. M., 102.4° F.; temperature at 4 P. M., 102.2° F. During the above period the breathing was rapid, with an occasional rigor.

Guinea-pig No. 422. Weight, 284 grammes. Received 0.0095 gramme of crystals at 12.05 P. M. Temperature at time of injection, 99.8° F.; temperature at 2.30 P. M., 97.4° F. On the next day there was quite a perceptible swelling where the injection was made. The pig was chloroformed at the end of twenty-four hours and showed considerable inflammation at the seat of injection. The tissues were hæmorrhagic and bathed in a serous exudate. The muscular tissue was much disintegrated, resembling the appearance from the action of a caustic.

Guinea-pig No. 511. Weight, 183 grammes. Received 0.0048 gramme in half a cubic centimetre of water at 11.25 A. M., subcutaneously in thigh. Temperature at time of injection, 103° F.; temperature at 12.25 P. M. (one hour after), 101.8° F.; temperature at 1.15 P. M., 102° F.; temperature at 3.25 P. M., 100.8° F. Chloroformed next day. Considerable inflammation, with serous exudate at seat of injection.

Guinea-pig No. 10. Received 0.0274 gramme at 10.10 A. M. Temperature at time of injection, 99.2° F.; temperature at 10.40 A. M., 100.2° F.; temperature at 11.15 A. M., 100.6° F.; temperature at 11.50 A. M., 100.6° F.; temperature at 2 P. M., 100.2° F. During above period this pig showed signs of restlessness, breathed rapidly, and shivered.

II. *Tuberculous Guinea-pigs.*—Guinea-pig No. 181. Received 0.017 gramme at 10.25 A. M. Temperature at time of injection, 102.6° F.; temperature at 11.40 A. M., 101.4° F.; temperature at 1.50 P. M., 102.8° F.; temperature at 2.50 P. M., 103.4°; temperature at 3.50 P. M., 103° F. Pig sat drawn up in cage and shivered.

Guinea-pig No. 259 had received virulent tuberculosis two weeks previous to injection of crystals. Received 0.0172 gramme at 10.45 A. M. Temperature at time of injection, 102.4° F.; temperature at 11.45 A. M., 101.6° F.; temperature at 3.20 P. M., 101.6° F. Distinct rigors and rapid breathing.

Guinea-pig No. 377, inoculated with sputum from a tuberculous patient some weeks before the injection of crystals. Received 0.023 gramme at 11.35 A. M. Temperature at time of injection, 101.2° F.; temperature at 11.35 A. M., 100.6° F. Trembling very noticeable.

Guinea-pig No. 11 had received attenuated and virulent tuberculosis culture some time before (weight, 448 grammes). Received 0.0096 gramme at 11.25 A. M. Temperature at time of injection, 103° F.; temperature at 12.25 P. M., 100.8° F.; temperature at 1.15 P. M., 101° F.; temperature at 3.25 P. M., 100.8 F.

The idea was suggested from these experiments that this acid, evidently a secretion of the germ, was one of its most powerful weapons, that by its action upon the tissue the cells were first destroyed so that they could subsequently be utilized by the germ as food, and in this way the germ protected itself from surrounding leucocytes. To test this, crystals dissolved in sterile water were injected by means of a hypodermic syringe directly into the liver tissue. At the same time the same quantity of water was injected into a check in the same way. After forty-eight hours the check and experimental animals were killed. The check failed to show any effect, while the other exhibited a liver with several light spots. A repetition of this experiment gave the same results.

No effort was made to recover these crystals from the liver as the amount used was too small. We did not test the effect upon the liver by an intravenous injection, as would otherwise have been done, because we had found that there was a combination of this acid substance with the albuminoids or bases, and any intravenous injection would have resulted in its immediate conversion into a modification by uniting with the albuminoids in the blood. Further, the growth of the germ in the body is localized, and where localized the necrotic areas are apparent, so that the fairest test was to bring the substance as soon as possible in contact with the tissue. The experiments in injections of the animals and appearance of sections follow:

Injection of Crystals from Artificial Cultures of Bacillus Tuberculosis into the Liver of Guinea-pigs.—Guinea-pig No. 409. Received 0.00178 gramme in liver on left side at 11.45 A. M. Temperature at time of injection, 101.6° F.; temperature at 3 P. M., 102° F. Chloroformed October 24, 1896, at 12 M. Liver dark; showing one or two small white spots and apparently a small inflamed spot at the point where the injection was made. Gall bladder was injected and seemingly inflamed.

Guinea-pig No. 412. Received 0.0037 gramme in liver at 1.45 P. M. Temperature at 1.45 P. M., 103° F.; temperature at 3.30 P. M., 100.4° F. Chloroformed at end of forty-eight hours. Gall bladder congested (not so much as in No. 409). Liver pale in spots, and one or two small white areas of apparent necrosis. The liver, hardened in $HgCl_2$, showed on microscopic examination one area rather well defined where the liver cells did not take hæmatoxylon well, though nuclei stain slightly.

Guinea-pig "C" received 0.0043 gramme crystals in liver. Chloroformed after six days. Pig weighed six hundred grammes.

Lungs were very slightly congested. In large left lobe of liver there were two or three comparatively large areas of necrosis. These spots were on the side in which injection was made, and the liver appeared to show the track of the needle. The guinea-pig was otherwise healthy.

Guinea-pig "E" received 0.0023 gramme of crystals in liver. Chloroformed after two days. Pig weighed three hundred and forty-five grammes.

All organs appeared normal, except the stomach, which showed a slight inflammation in its wall on the side which lay next to a necrosed spot in the liver. Besides this spot there were several others of considerable size in the liver on the side on which the injection was made. The section of pig "C," the one allowed to live six days after injection, showed, on microscopic examination, the following:

Stained with hæmatoxylon and eosin, distinct areas of necrosis were noted, the most marked ones near the surface of the liver. Polynuclear leucocytes are present, though not in large numbers, in and around the necrotic areas, and there was also an increase in the connective-tissue cells of the liver around these same areas. Plate I, Fig. 2, is a drawing of the liver section showing healthy and necrosed areas.

Checks on Injection of Crystals into Liver.—Guinea-pig No. 510. Received a fourth cubic centimetre sterile distilled water in liver. Chloroformed after forty-eight hours. Post-mortem showed all organs—liver, lungs, spleen, etc.—normal.

Guinea-pig No. 387. Received half a cubic centimetre of sterile distilled water in liver. Chloroformed after forty-eight hours. Post-mortem: All organs were normal, excepting one or two very small pale spots in the liver; no necrosis.

Prudden (7), 1892, suggests that caseation, so constantly present in tuberculosis, is probably due to a specific metabolic product of the bacillus.

It seems very reasonable to conclude from our experiments that we have here the substance formed by the bacillus which is responsible for the coagulation necrosis.

The formula which can be deduced from the analysis makes this acid correspond closely to teraconic, which has properties very similar to those noted by us in connection with this new acid. Its identity we have not yet proved or disproved, as the preparation of teraconic acid is not completed. The amount of acid obtained is very small, so that we have used only a very minute portion of it for testing its immunizing property. A single injection of 0.0020 gramme was sufficient to keep the animals alive some weeks longer than the checks, and its solution appeared to exert some slight bactericidal influence.

As this substance seemed to be a temperature-reducing principle in healthy and diseased animals, we endeavored to separate the fever-producing principle independently. The crystals were always found in the culture liquid, and only minute amounts could be obtained for the bacilli themselves that had been grown on liquid medium. Accordingly, these bacilli, carefully filtered without heat, were washed in cold water, and next extracted with hot water. This hot water extract contained an albuminoid which caused the tuberculin reaction in guinea-pigs and calves upon repeated injections.

Roux and Nocard (8) state that they have a tuberculin which will give reactions almost indefinitely, but do not describe its method of preparation. Whether this is the same substance that we have obtained I am unable to say, but certain it is that the tuberculin prepared in the way we have indicated will give reactions four or five times in succession, where the reaction with tuberculin as prepared in the ordinary way fails after the second time. The conclusion is a fair one, I think, that the fever-reducing principle having been removed, to an extent, if not entirely, the immunity to the fever-producing principle is much more slowly acquired. Our tests upon guinea-pigs and tuberculous calves were made with only one day intervening between the injections (see Table I).

In the *Deutsche medicinische Wochenschrift* for April 1, 1897, Dr. R. Koch (9) describes some new tuberculin preparations. The dried tuberculosis bacilli were taken (the culture medium used is not mentioned), finely powdered and centrifugalized with distilled water. The opalescent solution obtained, tested upon animals, gave the tuberculin reaction. The residual germs were submitted to this treatment a number of times, until finally all were practically dissolved. The latter solutions in large doses caused a reaction, but in small quantities did not produce this result, and seemed to exert both an immunizing and curative action in experimental tuberculosis. Koch used for this work virulent germs, and claims that attenuated germs do not give an active product. My own work was done with bacilli purposely attenuated by cultivation, and the results show that very active fever-producing, fever-reducing, and probably curative principles can be obtained from them. It hardly seemed justifiable to myself or others to powder dried virulent bacilli and have the dust floating in the air. Koch further refers to two fatty acids which, in conjunction with Proskauer (9), had been found in the bodies of the germs. The writers (10) of this paper published in the *American Chemical Journal*, August, 1895, a preliminary study of the fats of the tuberculosis bacilli, showing the high content of fat in the bodies of these germs, which accounts for the difficulty in staining them with certain colors, as well as their difficult absorption.

In a later paper, *Centralblatt für Bak. u. Parasitenkunde*, 1896 (11), we described briefly the different acids obtained from the body of the germ, both high melting and low melting acids, but whether or not these are identical with those observed by Koch and Proskauer we can not tell from the brief mention made of them.

From our results it seems very reasonable to think that the necrotic acid is the fever-reducing principle, the albuminoid the fever-producing principle, and the reason the tuberculin ordinarily does not react continuously is on account of their presence at the same time. At any rate, tuberculous guinea-pigs tested successively with tuberculin showed no reaction, while with this albuminoid, which we will call cell extract, a reaction was obtained.

The preliminary experiments, published by one of us in 1894 (12), upon the production of an immunity or resistance to tuberculosis by attenuated cultures have

TABLE I.—*Tests of Cell Extract, Tuberculin, and Serum.*

Date.	No. of animal.	Condition.	Weight in grammes.	Substance injected.	TEMPERATURE.		
					11.20 A. M.	1.40 P. M.	3.05 P. M.
March 26....	XI	Tuberculous guinea pig.	423	¼ c. c. tuberculin + ½ c. c. serum.	103·2°	96·6°	96·2°
	492	Tuberculous guinea-pig.	255	¼ " tuberculin.	102·8	105·0	104·4
	VIII	Attenuated tuberculosis.	443	¼ " tuberculin + ½ c. c. serum.	101·0	102·4	103·8
	XIX	Attenuated tuberculosis.	356	2 " cell extract=0·0040 gramme.	102·2	105·6	103·4
	513	Healthy (check).	210	1 " cell extract=0·0020 gramme.	101·4	101·6	101·1
					10.50 A. M.	12.25 P. M.	1.50 P. M.
March 27....	XI	Tuberculous guinea-pig.	...	¼ c. c. tuberculin.	101·2°	102·4°	102·4°
	492	Tuberculous guinea-pig.	...	2 " cell extract=¼ c. c. tuberculin.	103·0	103·8	105·0
	VIII	Attenuated tuberculosis.	...	¼ " tuberculin.	103·0	103·2	103·8
	XIX	Attenuated tuberculosis.	...	¼ " tuberculin.	102·8	103·8	103·0
	XX	Attenuated tuberculosis.	...	¼ " tuberculin + ½ c. c. serum.	102·4	95·0	95·0
					10.25 A. M.	12.10 P. M.	1.45 P. M.
March 29....	VIII	Attenuated tuberculosis.	...	2 c. c. cell extract=¼ c. c. tuberculin.	101·8°	103·8°	103·6°
	492	Tuberculous guinea-pig.	...	2 " cell extract=¼ c. c. tuberculin.	102·8	104·4	104·6
	XIX	Attenuated tuberculosis.	...	2 " cell extract=¼ c. c. tuberculin.	102·2	105·6	103·0
					10.45 A. M.	12.15 P. M.	2.10 P. M.
March 30....	492	Tuberculous guinea-pig.	...	2 c. c. cell extract=¼ c. c. tuberculin.	102·2	104·2°	104·2°
	XIX	Attenuated tuberculosis.	...	¼ " tuberculin.	102·2	103·2	103·6

TABLE II.—*Two Sets of Experiments showing the Average of Results in Experiment in which the Guinea-pigs were Vaccinated with Attenuated Germ and then Inoculated with Virulent Germ.*

No.	Date of inoculation and amount of attenuated germ.	Weight, Oct. 24.	Weight, Nov. 2.	Condition.	Date of inoculation and amount of virulent germ.	WEIGHTS.						
						Dec. 16.	Jan. 7.	Jan. 19.	Feb. 2.	Feb. 8.	April 8.	April 19.
373	Oct. 24, 1½ c. c.	12 oz.	14 oz.	O. K.	December 9th: 373, 375,							
374	Fiftieth generation.	10 "	11 "	....	and 378 dead from pneu-	14 oz.	16 oz.	16 oz.	15½ oz.	16 oz.	16 oz.	14 oz.
375	Fiftieth generation.	16 "	15 "	O. K.	monia; 374, 376, and 377							
376	Fiftieth generation.	16 "	14½ "	O. K.	each received ⅛ c. c. of	12 "	15 "	15 "	15 "	15 "	17½ "	18 "
377	Check.	13 "	13¾ "	O. K.	vir. tuberculosis; 4th gen-	12 "	13 "	12½ "	Dead.			
378	1½ c. c. attenuated germ.	14 "	14 "	Thin.	eration from rabbit.							

No.	Dec. 21.	Dec. 26.	Dec. 21.	Feb. 2.	Feb. 12.	March 8.	March 16.	April 6.	April 19.	April 21.
II.	All but	All given	13 oz.	14 oz.	16 oz.	All, including checks (X	16 oz.	Chloroformed.		
III.	X and XI	1½ c. c. of	12 "	15½ "	14 "	and XI), inoculated with	17 "	17 oz.	19 oz.	
IV.	(checks)	61st gen-	15 "	16 "	17 "	⅛ c. c. virulent germ.	20 "	21 "	20 "	
V.	received	eration	13 "	15 "	16 "		17½ "	19 "	19 "	
VII.	½ c. c. of	except	14 "	13 "	14 "		16 "	16½ "	18 "	
VIII.	61st gen-	checks	15 "	15 "	16 "		17 "	16 "	18 "	
IX.	eration.	(X and XI).	12 "	13 "	11 "		14 "	15 "	16 "	
X.			.....	16 oz. ch.	16 oz. ch.	18 oz. } checks Mar. 6.	17½ oz. ch.	14 oz. ch.	12 oz. ch.	Dead ch.
XI.			.....	15½ oz. ch.	16 " "	17½ " }	17½ " "	Dead.		
XII.			16 oz.	16 oz.	16 oz.		18 oz.	19 oz.	19 oz.	
XIII.			14 "	15 "	16 "		18 "	17½ "	16½ "	
XV.			15 "	16 "	18 "		18 "	14 "		
XVI.			15 "	15 "	17 "		18 "	18½ "	20 oz.	
XVII.			12 "	12 "	13 "		15 "	15 "	14½ "	
XVIII.			15 "	15 "	16 "		16 "	17½ "	17½ "	
XIX.			14 "	13 "	14 "		13 "	13 "	12½ "	
XX.			15 "	18 "	18 "		20 "	19 "	19 "	

been continued and are confirmatory of the first results, showing the production of great resistance and in some cases complete immunity. A detail of two sets of these experiments may be given as an instance of their general results (Table II).

The first effect of the injection of the attenuated germ was in some instances to cause a slight decrease in weight; sometimes a local swelling was noted at the point of injection, and occasionally an enlargement of the inguinal glands. This disappeared after some weeks. This local swelling we consider to be due to the mechanical action of the body of the germ on account of their high fat content and possible presence of a minute amount of the acid causing necrosis. It does not always result from a subcutaneous inoculation, and an apparent immunity to this action is acquired by repeated injections. This is well shown in horses and cows submitted to treatment with the attenuated bacilli. From six to eight weeks after the date of the injection of the bacilli guinea-pigs seem to be entirely well, and are then inoculated with the virulent bacilli. As can be seen from the chart, the checks died within six weeks from date of inoculation, while the others vaccinated remained well four months afterward. It has appeared from the many experiments made that if the inoculation with the virulent bacillus is made before complete recovery from the treatment with the attenuated bacillus, the resistance is considerably less. The inoculation of the animals with the virulent bacillus, and subsequent treatment with a single injection of the attenuated germ, showed that the latter produced a slight resistance, but no very material retardation of the disease.

The production of this partial immunity or artificial resistance by means of the attenuated germ (12) suggested already in 1894 the availability of this same material for the purpose of treating animals for the production of a serum which would have some effect in curing tuberculosis. It suggested the idea, further, that possibly cattle could be vaccinated with this attenuated germ and made immune to tuberculosis.

Experiments tried in this latter direction will be reported later.

Two cows and one heifer were selected for the work, which was conducted for us by Dr. Schroeder, in charge of the Experiment Station of the Bureau of Animal Industry. One of these animals was originally tuberculous; the other two were healthy. To the tuberculous animal were given large doses of tuberculin until it had received altogether 19,407 cubic centimetres (nineteen litres and a half), and as much as 1,500 cubic centimetres of tuberculin at a single dose from November, 1894, to April 20, 1897. The other animals received injections of the attenuated culture, the amount injected in fifteen months being 11,425 cubic centimetres and 18,100 cubic centimetres, respectively, and by this we mean the liquid culture *in toto*, including the bacilli thoroughly shaken in the media, forming an emulsion, just as taken from the incubator without any further treatment. At first the injections produced a slight reaction and occasionally a local œdema and abscess. After they had been continued for some time this effect diminished or disappeared. The serum of all of these animals was tested a number of times. Guinea-pigs were injected with the serum in quantities varying from one and a half to six cubic centimetres, and subsequently inoculated, together with the checks, with a tuberculosis bacillus sufficiently virulent to kill the checks within four or five weeks; or the pigs were inoculated with the virulent bacillus and treated by subsequent injections of the serum. Without giving the details of the experiments we may say that the serum from the cow treated with tuberculin would cause in the pigs a slight resistance to the virulent bacilli; the serum of the cows treated with the attenuated bacilli produced more resistance on the part of the guinea-pigs, or prolonged their life to some extent, but not sufficiently, as compared with the quantity of material injected, to make the use of cow serum appear practicable. The cow serum, although sterile, frequently produced abscesses in the guinea-pigs. This serum we expect to test again when it should be more active.

While these experiments were in progress two horses had been pressed into service. They were treated by injecting the attenuated cultures, culture fluid, and bacilli. The first injection of five cubic centimetres caused a decided temperature reaction, local œdema, stiffness, slight loss of appetite, recovery after a few days. At first local abscesses were formed, which healed fairly readily. After a time the abscess formation ceased. After eight months' treatment, the dose of the culture being gradually increased up to three to four hundred cubic centimetres at a time—the total amount injected in fifteen months being four thousand four hundred and fifty-nine cubic centimetres—the serum was used for testing. It separated out clear and well. Two sets of illustrations may be given to show its action on tuberculous animals. In one set (Table III) the checks and two treated pigs died; the other two treated pigs are alive, and in perfect health, apparently, after a number of months. In another set the checks, four in number, died within four to five weeks, while the treated ones lived two to three weeks longer, showing, on autopsy, much less disease in the lungs than the checks. We endeavored further to isolate from the serum antitoxic substances by a slight modification of the Brieger-Boer method. We finally succeeded in obtaining a small quantity of a grayish powder giving the biuret reaction, with difficulty soluble in water, which was used for treating guinea-pigs in the same way as the serum. The result was about the same as in the first instance. The pigs, half a pound in weight, were inoculated with a virulent germ and treated by a single injection of 0.008 gramme of this solid substance. They lived three or four weeks longer than the checks, the lungs again showing considerably less disease, and less necrosis was noted in the liver (Table IV).

The effect of the serum was also tried in preventing the rise of temperature in tuberculous guinea-pigs and in saving them from a fatal dose of tuberculin. As can be seen from the temperature reactions in Table I, the injections of one fourth of a cubic centimetre of diluted tuberculin, and at the same time of half a cubic centimetre of the serum, either caused a decided reduction of the temperature or prevented a characteristic tuberculin reaction in animals weighing five hundred grammes. This is one way of gauging the serum.

The result of all this work leads us to the conclusions that the injection of the live culture produces substances antitoxic to the disease which will cure tuberculous animals; that the quantity of this substance can be increased gradually; that the treatment of tuberculosis is and will be for some time still in the experimental stage. One point, however, must be remembered—viz., that while it may be difficult to cure the disease in a guinea-pig, where its course is very rapid—a virulent bacillus requiring only from four to five weeks to kill—it might be much easier to check the disease when more prolonged in action, as in the majority of cases in man. Again, in addition to some form of specific treatment for the disease, man usually has the advantage of being placed under the best possible surroundings as to diet, climate, etc., and every effort is made to aid the improvement of the patient, while with experimental animals the conditions are different.

TABLE III.—*Serum from Horse Injected with Attenuated Culture used on Tuberculous Guinea-pigs.*

No.	Weight.	Date and amount of virulent culture.	DATES AND AMOUNT OF SERUM INJECTED.						
			Nov. 6.	Nov. 17.	Nov. 25.	Dec. 3.	Dec. 8.	April 19.	
434 ch.	10 oz.	Oct. 24th; ¼ c. c. of virulent tubercular culture given to all; all except check received 1½ c. c. of serum.	10 oz.	8½ oz.	8 oz.	Dead.			
435	9 "		9 " + 1½ c. c.	8 " + 1½ c. c.	8 " + 1½ c. c.	.....	9 oz.	20 oz.	Alive and well.
436	11 "		10 " + 1½ "	9 " + 1½ "	7 " + 1½ "	Dead.			
437	14 "		13 " + 1½ "	11 " + 1½ "	10 " + 1½ "	.....	10 "	20 "	Alive and well.
438	9 "		8 " + 1½ "	8 " + 1½ "	6 " + 1½ "	Dead.			
439	8 "		8 " + 1½ "	7 " + 1½ "	5 " + 1½ "				

TABLE IV.—*Tests of Dry Antitoxic Material from Serum from Vaccinated Horse.*

No.	Weight.	Date.	Material for inoculation.	Date.	Weight.	Date.		Date.	Weight.	Date.
464	Check, 11 oz.	Feb. 4.	⅛ c. c. virulent culture.	Feb. 20.	11 oz.	....	....	March 6.	10 oz.	March 8, dead.
476	12 "	" 4.	⅛ c. c. virulent culture + 0·008 grs. antitoxine.	" 20.	12 "	....	....	" 6.	10 "	March 16, dead; less disease than others.
478	Check, 8½ "	" 4.	⅛ c. c. virulent germ.	" 20.	8 "	Feb. 26.	Dead; tuberculosis.			
479	Check, 8 "	" 20.	⅛ c. c. tuberc. virulent.	....	.....	....	....	" 6.	7 "	March 8, dead; generalized tuberculosis.
481	Check, 10 "	" 20.	⅛ c. c. tuberc. virulent.	....	.....	....	....	" 6.	9 "	March 12, dead.
482	13 "	" 20.	⅛ c. c. tuberc. virulent + 0·008 grs. antitoxine.	....	.....	....	....	" 6.	12½ "	April 7, dead; less disease.
484	12 "	" 20.	⅛ c. c. tuberc. virulent + 0·008 grs. antitoxine.	....	.....	....	....	" 6.	12 "	April 2, dead; less disease than others.

The experimental results obtained lead undoubtedly to the conclusion that while the treatment with antitoxic serum is still in the experimental stage and should be as yet only used in sanitariums and under the best conditions, we are on the road to success in the treatment of this disease and nearer our goal than ever before. In an experimental way the antitoxic serum as prepared in our laboratory has been used by Dr. Stubbert at the Loomis Sanitarium and some by Dr. Trudeau at Saranac Lake, as well as by Dr. C. W. Richardson in this city (Washington, D. C.).

Dr. Stubbert, out of six cases treated, reports one cured and others improved. Dr. C. W. Richardson notes decided improvement in his cases, while Dr. Trudeau, who has used some of the serum for a short time only, records a reduction of a high temperature in one case.

Maragliano, Babes, Behring, and Paquin are the other principal workers in the preparation of an antitoxic serum for tuberculosis.

Maragliano (13) gives the method he has used for the production of antitoxic serum, and notes that there is present in the cold filtered cultures of the tuberculosis bacilli, a substance which causes the reduction of temperature, and another not destroyed by heat, which causes the rise of temperature. In all probability, without isolating the principle, Maragliano was using solutions of the crystalline substance we have described in the beginning of this paper. While this is not destroyed by heat, as he seems to think, it does undergo some change by combining probably with the albuminoid matter in the media, and thus losing its distinct property as a temperature-reducing substance. Or, more probably, its temperature-reducing property is disguised by the presence of the temperature-producing principle extracted by hot water. The serum which he claims to obtain from treatment of the animals is said to have some effect in reducing the temperature and apparently improving the disease.

Babes (14), reviewing a portion of the work upon the treatment of tuberculosis with serum, comes to the conclusion that he is the first individual to have discovered any antitoxic properties in the serum from treated animals; that there is an antitoxic substance present in this serum, but that it has not yet been brought to a sufficient development to warrant general use.

Our experiments lead us to conclude that while the injections with tuberculin produce a serum containing antitoxic material, the amount of this is small, and that the injection of the live culture is the proper treatment. We can not agree to the statements made that horses are unsuitable for the work. Mules and donkeys may perhaps give results more quickly, but horses seem to be eminently satisfactory. At no time have we found that the horse serum produces toxic effects, although this has been noted in the cow serum.

If the antitoxic serum treatment and other methods for tuberculosis could be freed for the present from their commercial aspect, and careful, systematic experiments continuously conducted in numerous hospitals and sanitariums, this or a similar modified method of treatment could be looked to for good results.

When tuberculosis can be uniformly cured in guinea-pigs as certainly as diphtheria, then does the commercial aspect become a fair and legitimate one.

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A LARGE ANGEIOMA OF THE LIP.

A SKIN LESION OCCURRING WITH GONORRHŒAL SEPTICÆMIA. A CYST OF THE PALM.*

By ROBERT T. MORRIS, M. D.

Angeioma of the Lip.—John T., aged thirty-two years, was brought to New York in November, 1895, by his physician, Dr. J. L. Polk, of Arcola, Illinois. The patient at birth had a small nævus of the upper lip, which was not very important until 1884, when an attempt at removing it was made in Chicago. After the operation the neoma increased rapidly in size. In 1892, in Terre Haute, another operation was done by the plan of removing the growth in sections, but this operation was not carried to a finish on account of hæmorrhage. In the same year, in St. Louis, setons were introduced through the lip, as many as thirty-five being employed simultaneously. This treatment stimulated the development of the tumor, and it increased in size very rapidly, taking on a malignant appearance.

When I saw the patient, in November, 1895, the tumor was a large, purplish, heaving mass, which pulsated so strongly that it seemed to be on the point of bursting with every heart beat. The tumor had its origin at the site of the upper lip, but it hung below the chin, so that the patient had to lift it with one hand in order to get food into his mouth. I planned to ligate both external carotid arteries as a preliminary step before operating upon the lip, but two of my assistants seemed to control the circulation so well by hand pressure that I depended upon that resource. The first incision into the mass was followed by such a torrent of blood that it was evident that the patient would die upon the table in a few moments. There was no time to ligate the carotids, so I instantly thrust a scalpel entirely through the base of the tumor, leaving the blade on one side and the handle on the other, to serve as a holding post for a bandage which was tied so firmly about the base of the tumor that all hæmorrhage ceased. The tumor was then cut away, leaving the scalpel and bandage in place for a week. At the end of that time all of the stump of the tumor had become sphacelated, and it was safely trimmed away with scissors, leaving normal tissues quite clean. As soon as the granulating surfaces had healed, a new lip was made by taking skin flaps from the cheeks, and this promised a pretty result until new angeioma developed suddenly at a suture and spread so rapidly that in less than a month a bluish pulsating tumor, similar to the original growth, had extended out upon the cheeks. The case was thought to be hopeless, but Dr. W. B. Coley began injection with toxines and the tumor soon diminished in size, and finally became stationary and small, but presenting, nevertheless, the color and general look of the original growth, although with much less pul-

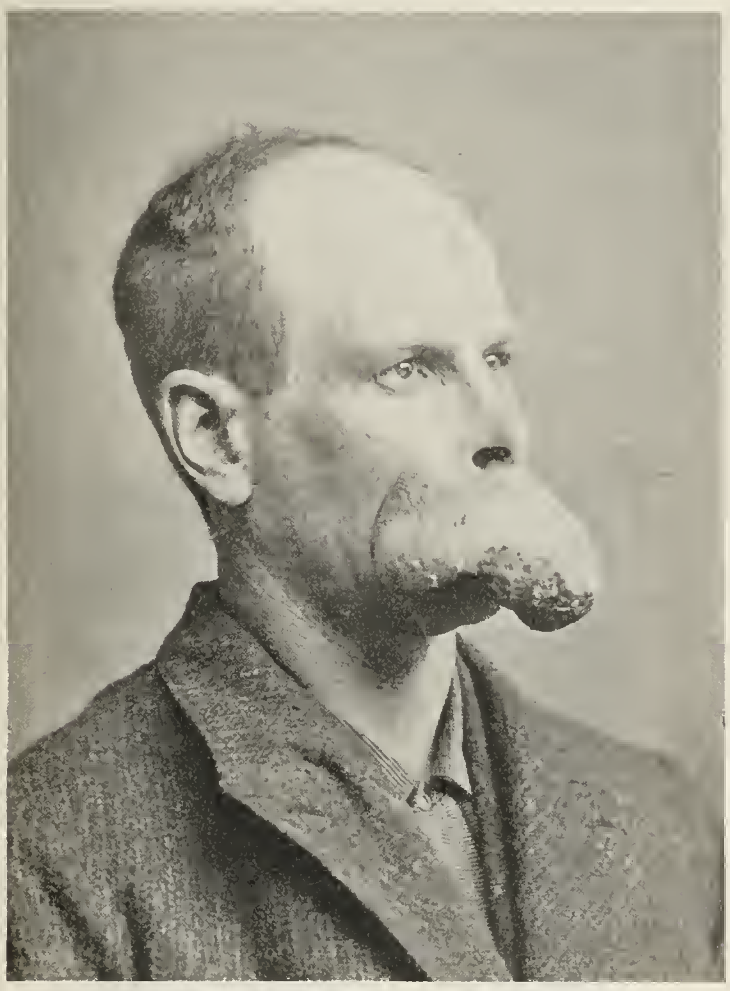

Fig. 1.

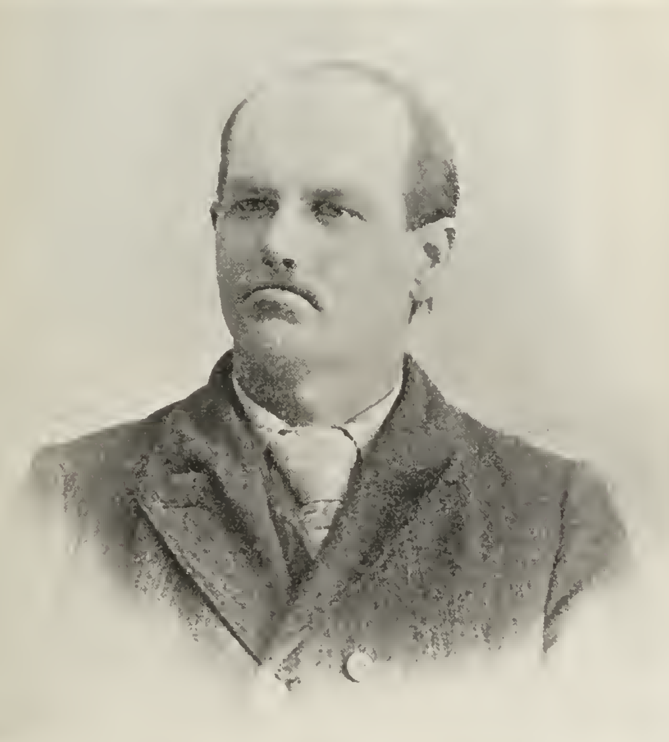

Fig. 2.

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* Read before the Society of Alumni of Bellevue Hospital, April 7, 1897.

sation. A small section of the tumor was examined at this time by Dr. H. T. Brooks, who had made the microscopical examination of the original tumor. Dr. Brooks found that the neoma was still angeioma, though it was slowly diminishing in size. The patient returned to his home in Illinois, and Dr. Polk wrote me that the evidences of disease slowly disappeared and the patient became perfectly well. One of the accompanying photographs (Fig. 1) shows the original tumor before operation. The other photograph (Fig. 2), taken a year later, shows the result of treatment.

A Skin Lesion occurring with Gonorrhœal Septicæmia.—A man, aged twenty-five years, patient of Dr. T. D. Rupert, of Geneva, N. Y., contracted gonorrhœa in July, 1895. In October of the same year, gonorrhœal septicæmia caused arthritis, which shortly disappeared. In the following September (1896) the arthritis again became progressive, and the nuchal fibrous tissues were also involved. The arthritis involved at different times ankle, wrist, elbow, shoulder, knee, and hip joints. The patient became very anæmic, and the right epididymis suppurated. The skin lesions appeared in October, 1896, and affected the calf, ankle, dorsum of foot, and forearm—both right and left extremities about equally involved. Each lesion appeared at first as an indurated, painful, red blotch, and in the centre of the blotch an ulcerating crater formed, quite round, with sharply defined edges, and evidently penetrating the entire thickness of the skin. The discharge from each crater was sanious. The craters varied from about five millimetres in diameter to about twenty-five millimetres in diameter. One after another formed, until there were fifteen in all (syphilis was excluded in diagnosis). In January, 1897, I removed the suppurating testicle, and cut a stricture of the urethra. Subsequent treatment of the infected focus behind the stricture region in the urethra was carried out by Dr. Rupert. The patient at once began to recover from his anæmia, arthritis, and skin lesions, and at the present writing, April, 1897, there remains only a little tenosynovitis near the left wrist and an occasional twinge of pain in the nuchal region. The craters have all healed with the exception of a sinus from burrowing discharges in one. Crops of papules form in clusters near the old crater sites. Each papule is about as large around as a lentil, and is marked by scaly desquamation of surface epithelium. Scrapings from the craters were examined for gonococci, but this was not done until the craters had all begun to heal, and we found only a number of mixed bacteria without gonococci. Two photographs (Figs. 3 and 4) are presented to show the crater skin lesions.

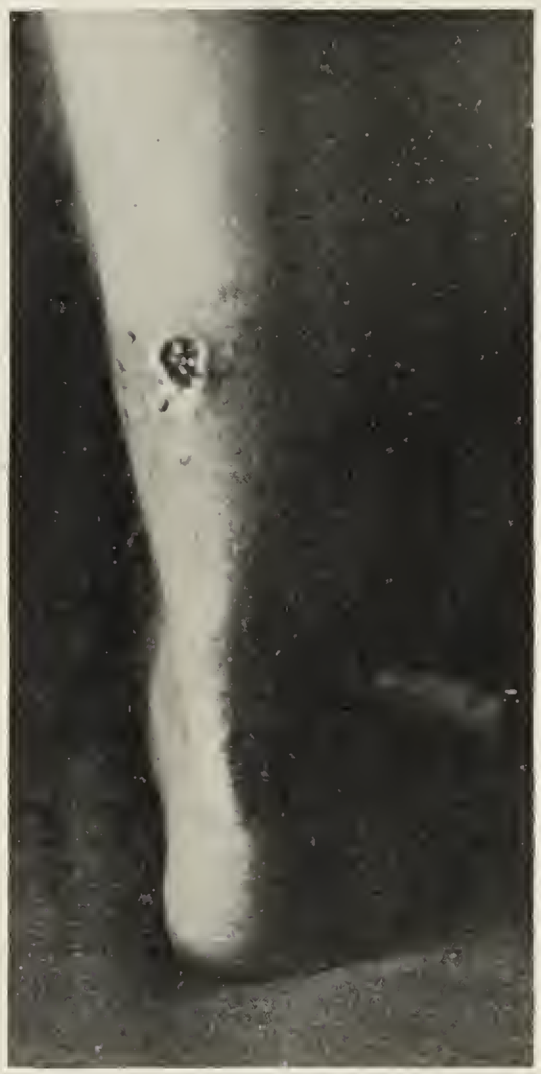
FIG. 3.

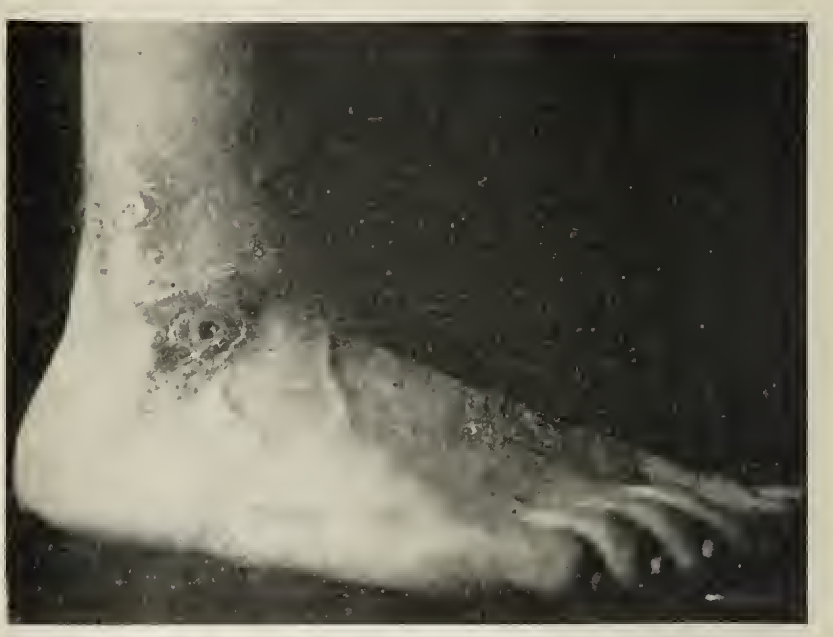
FIG. 4.

A Cyst of the Palm.—Miss S., aged fifty-two years. For fifteen years has noticed a slowly developing painless tumor situated to the right of the left thenar eminence. She thinks that a very small nodule had existed at that site for many years previously. Within the past two years slowly developing "cold abscesses" have formed at the anterior surface of the left carpus. The accompanying photograph shows the tumor and one "cold abscess." I removed the cyst and opened the abscess. The abscess pus contained streptococci, but no tubercle bacilli or actinomycosis rays. The fluid from the cyst, viscid and nearly transparent, was not examined,

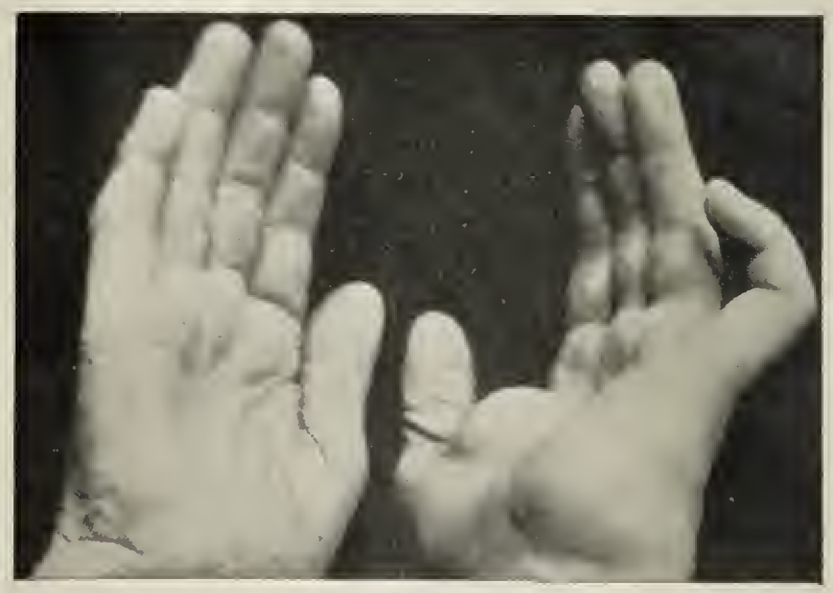
FIG. 5.

but the cyst wall was found on examination to consist of nothing but connective tissues. The tumor was probably a thecal retention cyst.

AEROTHERAPEUTICS AND HYDROTHERAPEUTICS IN THE TREATMENT AND PREVENTION OF PULMONARY TUBERCULOSIS.*

By S. A. KNOPF, M. D. (Paris and Bellevue),
PHYSICIAN TO THE LUNG DEPARTMENT OF THE NEW YORK THROAT AND NOSE HOSPITAL.

Preventive medicine can no longer be called the medicine of the future, for it has become the medicine of the present. All the great advances made in the art of healing by the present generation of medical men have been in the direction of preventing rather than curing disease. Serotherapy, the latest and most marvelous attainment, by which we immunize, check further invasion of the micro-organisms, and neutralize their toxines when the disease has been already established, is preventive medicine indeed. And who will dare deny that before long we may be able to employ serotherapy successfully for all acute diseases? But may we cherish the same hope for chronic disorders where destructive processes have been going on for years, as, for example, in pulmonary tuberculosis? I confess freely that I can not. Although the great Koch has told us recently that he has perfected his tuberculin to a degree that he can safely recommend it to the profession, it seems to me difficult to believe that we ever shall have a serum or tuberculin which in a few weeks, even with numerous injections, will be able to produce enough fibrous connective tissue to strangle countless tubercles which it took years to form, or to create enough phagocytic blood-corpuscles to swallow myriads of bacilli. We may employ serotherapy in an acute exacerbation due to an association of microbes, and my own experiments have taught me its value in presence of the streptococci.† But to heal a tuberculous lesion we must produce new tissue; we must feed our patient and feed him well. To increase his appetite and his powers of assimilation I know of no better means than the judicious employment of aerotherapeutics and hydrotherapeutics.

Will it ever be possible to render an individual immune from tuberculosis by the injection of a tuberculin or serum as it is possible for us to do in diphtheria and variola? It is certainly not so yet, but these are not the only means to fortify the system against the invasion of disease. While consumptives, through ignorance and carelessness, may spread the germs of their disease everywhere, if the teachings of modern phthisiotherapeutics are followed, even the child of tuberculous parents may become a strong, healthy man or woman, and the accidental inhalation or ingestion of the tubercle bacilli will not suffice to make a consumptive of him or her. The experiments of my lamented teacher, the late Professor Straus, of Paris, and his pupils Wurtz and Lermoyez, have shown beyond a doubt the frequent presence of tubercle bacilli in the nasal mucus of healthy individuals. But their experiments have at the same time demonstrated the bactericidal quality of the healthy nasal secretion.

A predisposition to pulmonary tuberculosis may be inherited or acquired, but in either case the means to overcome this peculiar susceptibility are the same.

Let us examine for a moment an individual predisposed to consumption, and we shall be better able to understand the reasons for the therapeutic measures which I shall describe. If it is a child, he will either be undersized or present an almost abnormal height for his age, with a narrow chest. He will be a bad eater, irritable, nervous, anæmic, with irregular digestive functions; at times constipated, at times suffering from diarrhœa; prone to all the diseases of childhood, and still mentally rarely behind his more robust companions. He is averse to outdoor play, and, owing to his delicate constitution, he is allowed to have his way, and his character is often spoiled.

The adult candidate for pulmonary tuberculosis differs from his younger brother but little; the physique is the same; the peculiar condition of mind is more pronounced; while he is sanguine at times, anxieties, disappointments, especially unfortunate love affairs, and similar sorrows often suffice to bring about a rapid development of the disease. One in sorrow eats but little, the arterial pressure is low, and the muscular weakness and depressed nervous state make the act of breathing incomplete. The beneficial influence of natural and full breathing does not exist any more, the heart is called upon to do more work, and a perpetual palpitation ensues. The circulatory disturbances in the lungs impair the nutrition of those organs, and thus the field for the invasion of the bacillus of tuberculosis is prepared.

The decreased power of resistance makes this anæmic individual, in addition, especially prone to acute inflammation of either the mucous or serous membranes, and catarrhal conditions of the upper respiratory organs become alarmingly frequent and inclined to descend into the deeper air passages. And why do these people take cold so easily and frequently? Because their vasomotor system is impaired, and the slightest change of temperature or insignificant exposure of some part of the body usually covered suffices to hinder the peripheral circulation to the extent of producing congestions and to impair the process of elimination of used-up substances, whose toxicity increases with the length of time they are retained.

It seems, then, evident that the insufficient air supply to the respiratory organs and the increased susceptibility to the slightest change of temperature are the principal factors in the production of consumptive individuals. Therefore, to prevent or improve the condition caused by an insufficient air supply we must resort to aerotherapeutics, and to arouse the vasomotor system to a more energetic action we have in hydrotherapeutics not the only therapeutical agent, but, considering its salutary secondary effects, the most valuable one.

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* Read before the American Climatological Association at its fourteenth annual meeting.

† Knopf. Hygienic, Educative, and Symptomatic Treatment of Pulmonary Tuberculosis. Presented at a meeting of the New York Academy of Medicine, January 21, 1897 (*Medical Record*, February 13, 1897).

To prevent pulmonary tuberculosis we must begin with treating the child *in utero*, continue in the lying-in room, nursery, and schoolroom, and teach the young man or woman to keep the treatment up throughout life. A woman who is to give birth to a child should abandon the corset and tight clothing in time to allow a continued, free abdominal and thoracic respiration. Wiser yet if she had never been addicted to the habit of tight lacing, for the experiments of Kellogg and Mays have demonstrated the fact that the so-called female, or costal, type of respiration, which prevails among civilized women, is the result of their restricting and unphysiological mode of dress, and is not due to the influence of gestation or to a natural difference in the anatomo-physiological growth of man and woman.

For the mother to live as much as possible in pure, fresh air, to take frequent breathing exercises, to avoid crowded assemblies where the air is vitiated, and to live, in short, as hygienic a life as circumstances will permit, will have a most salutary effect on the child's future health. The newborn child is in need of pure fresh air as much as the mother, and the lying-in room and nursery should always be well ventilated. When the child, in time, is taken for an airing, the thick, almost impermeable veil should be abandoned. These veils, often tightened around the little face, press against the nose and make it difficult for the child to breathe naturally, and the mother wonders why the baby got in the habit of breathing through the mouth.

I consider the air bath and sun bath for children at the earlier age most beneficial. Let the little ones toddle around naked every day for a little while, in cold weather in well-warmed rooms, and in the summer in the room bathed by the rays of the sun. They will become less susceptible to colds than if always carefully bundled up. In localities where it is impossible to prevent the constant inhalation of coal dust or other irritating substances a regular nasal toilet with a mild antiseptic solution, or perhaps best of all plain tepid but previously boiled water, should be instituted for little children until they are old enough to blow their noses properly.

As soon as the age and intelligence of the child will permit, breathing exercises should be taught him. He should learn to love them as the average child likes general gymnastics. Our schoolrooms should be model localities for ventilation, and to teach the children how to breathe, sit, stand, and walk properly should form a part of the everyday curriculum. Every school should have its large playground or roof garden where, weather and season permitting, the classes should alternately receive their instruction. In rural communities during the warmer season instruction indoors should be the exception, not the rule. Singing and recitation especially should be encouraged out of doors.

Before closing with the subject of school hygiene I can not help recalling here the words of my friend, Dr. W. W. Hitchcock, to whom I had the good fortune to listen when attending last year the California Sanitary Convention in Los Angeles.

In speaking of the gymnasium as a sanitary measure, he referred to the frequent lack of the development of the thorax, particularly noticeable in those predisposed to pulmonary diseases, and said: "There is no doubt that if as much care were bestowed on our young in seeing that this particular part was developed with that care that the brain receives, tuberculosis would almost disappear." These words impressed me deeply, for they contain much truth.

Hydrotherapeutics, as a measure to prevent pulmonary tuberculosis, tends to develop to a more energetic action of the vasomotor system, and should also be instituted at an early age. A child a few months old can support with impunity a rapid sponging off with cold water, followed by a relatively vigorous friction with a soft Turkish towel after its warm bath. As the child grows older it should not only be taught this use of cold water after its semiweekly or weekly bath, but should wash at least face, neck, and chest every morning with cold water. The utility of all-the-year-round swimming baths where old and young of all classes can, gratuitously or for a moderate price, enjoy the salutary effects on body and mind of a good swim is too well known to need repeating.

For anæmic individuals, who, as I stated above, are, in general, candidates for consumption, a graduated course of hydrotherapeutics seems to act almost as a specific. That there is never any danger from a judiciously applied affusion or douche has been demonstrated by years of practice. And why should there be? All that is necessary is to assure a proper reaction, and an education of the skin and nervous system before the classical douche is applied. Herein I make no exception; whether the patient is simply predisposed, an anæmic, or a fully developed consumptive, I begin with a dry massage for several days and sometimes weeks. If the skin is particularly dry, I use, in addition, inunction with some fatty substance, preferably cod-liver oil. Next, for about the same period of time, comes the friction with pure alcohol, then with half alcohol and water, finally the friction with water alone; then come the cold sponge bath, the affusion, and at last the douche. The friction with the hands directly in contact with the skin or over a large towel after the douche should always be kept up until the patient is thoroughly dry and warm. A short promenade or a return to bed should follow, according to the indication of the case. The cold douche should never last longer than twenty to twenty-five seconds, and one should always go gradually, not giving more than five seconds at the beginning. The temperature may vary from 40° to 60° F. for ordinary cases. Only exceptionally would one need a graduation of the temperature of the water. Dr. Baruch, of New York, has constructed a very ingenious instrument whereby the duration, pressure, temperature, and particular form of douche can easily be controlled by the operator. For a sanatorium or special hospital such a complete douche apparatus seems certainly a very valuable addition to its equipment.

My favorite way is to apply the douche first in the form of a spray uniformly over all the body and direct a narrow jet with a little more force over the apices. In private practice, and in such cases where the visit to the douche room is either inconvenient or not safe, I resort to the following simple method: A wooden chair is placed in a large circular English bath tub, and the patient sits astride the chair, holding the back with his hands and bending his head slightly forward. Then two, four, or more pitchers of cold or tempered water are rapidly poured over the shoulders. In cases where the reaction is feeble the patient is quickly put back into his warm bed, even if not thoroughly dry.

The best time to take the hydrotherapeutic application is in the morning, half an hour or so after a very light breakfast. Patients accustomed to our heavy American breakfast should take such after their douche and morning walk, but should take a glass of milk with a slice of buttered toast before leaving the room.

In some cases I found it wise, in order to overcome the fear of cold water, to begin with only partial affusions or spongings. The complicated procedure of the dripping sheet seems to entail too great a strain on the patient, and I do not favor it in phthisiotherapeutics. Wet packs over the thorax, on the contrary, seem to exert a soothing influence whenever there are pleuritic or intercostal pains, or that vague and undetermined feeling of discomfort in the chest. In persistent hyperidrosis I have obtained satisfactory results by the following method, in many cases where the best-known medicinal agents to combat night sweats had failed. Several thicknesses of rather coarse linen, folded in the form of a shawl, are soaked in water at a temperature of about 55° F., wrung out, and then closely applied over apices and around the thorax. A thick flannel band, somewhat wider than the compress, is wrapped over this and the whole fastened in place and allowed to remain thus all night. The patient usually feels no discomfort, sleeps well, and sweats but slightly if at all. In the morning the compress is removed, and chest and shoulders are rubbed thoroughly dry by a gentle massage.

Lateral douches, not too strong, directed toward the site of old pleuritic adhesions, often aid considerably to cause a resorption of the fibrinous bands and a consequent free chest expansion.

Hydrotherapy, finally, renders excellent services in hæmoptysis. It must, of course, be applied without disturbing the patient, as absolute rest is the first and all-important indication. While morseled ice in bags over heart and apices is perhaps the most efficacious local antihæmorrhagic remedy, since ice is not always on hand when it is most urgently needed and the weight of the bags, on the other hand, becomes sometimes oppressive to the patient, the following method of applying cold water, when in presence of hæmorrhage of the lungs, is, I think, well worth remembering. It was, I believe, first instituted by Winternitz. One procures the water as cold as possible and soaks in it a part of a sheet or a piece of rather coarse linen. When wrung out, so that it does not drip, the cloth is folded in the shape of a triangle and placed closely over the patient's chest and pressed into the supraclavicular spaces. The apex of the triangle reaches over the pit of the stomach, and the base touches the neck. Whenever the compress becomes warm it can be rapidly changed without disturbing the patient's position. The cooler and more frequent the application the more rapid is the action of the vaso-constrictors.

We now come to the subject of aerotherapeutics proper, and I desire first to consider it as applied to patients in the sanatorium. It is there that the consumptive is made almost to live out of doors, and is always surrounded by a fresh, pure atmosphere. For six to eight, sometimes ten hours a day he remains on the open veranda on his comfortable steamer chair, in a position allowing complete muscular relaxation. The weather has little influence on the feasibility of this outdoor rest cure. In Falkenstein the patients remain outdoors in spite of rain, fog, snow, or any other kind of weather. Only very intense east winds are indications for shortening the *Liegekur*. Dr. Andvord, of Tonsaasen, Norway, writes me that he leaves his patients out of doors on their chairs, wrapped up in their furs, from five to nine hours a day at a temperature of —13° F. The air cure must, however, be begun by a short stay, which is gradually prolonged as the patient becomes accustomed to it.

Recreation pavilion, library, parlor, dining room, etc., are, of course, well ventilated, and at night the patient sleeps with the window open—entirely open in summer, partly so in winter. It is to this living constantly in pure, fresh air, the *Dauerluftkur* of the Germans, that the good results of the sanatorium treatment must, to a large extent, be ascribed. The air cure on the veranda should be alternated by graduated promenades—that is to say, walks on paths varying in inclination from one foot in three hundred to one in sixty. Every half hour or so the patient should rise from his chair to take his breathing exercises. I have experimented myself and with patients with the various mechanical devices and appliances, and have abandoned them all. I have learned that the simple exercises without apparatus are not only just as efficacious with less danger of being overdone, but the patient is also more likely to carry them out.

The following is a description of the exercises I recommend to the chronic tuberculous patient able to walk about, to the anæmic, the predisposed, and to all children and adults who breathe faultily; these are also a part of the gymnastic exercises I should like to see incorporated in the curriculum of all our schools, and not only in the selected few.

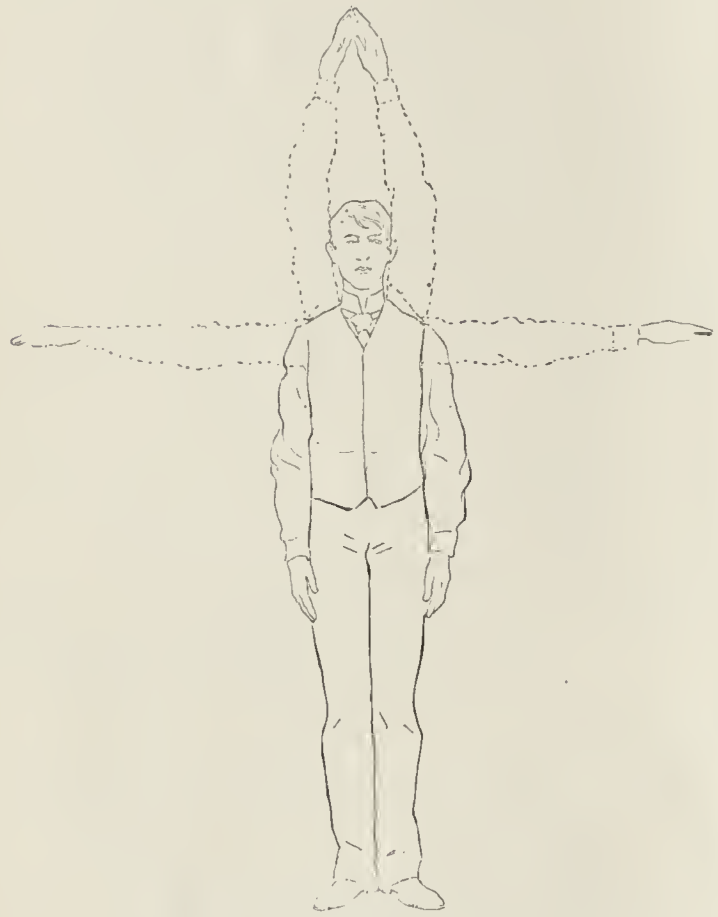

Fig. 1.—First and second respiratory exercises.

The patient is taught to stand properly and to breathe always through the nose. He takes a deep inspiration slowly while raising the arms from the sides to a horizontal position, holds the breath for a moment, and lowers the arms during the expiration, which should be somewhat more rapid. The second exercise is like the first, except that the upward movement of the arms is continued until the hands meet above the head. In the third exercise the patient stretches his arms out as in the position of swimming, the dorsal surfaces of the hands touching each other. During the inspiration the arms are moved outward and finally meet behind the back. They are brought forward again during the expiration. Each respiratory act should be followed immediately by a secondary forced expiratory effort. This is for the purpose of expelling as much of the supplemental air as possible, and may be effectually aided by supinating the arms and pressing the thorax with them.

If you consider that the amount of tidal air—that is to say, the volume which is inspired and expired in quiet respiration—is only five hundred cubic centimetres; the complementary air, the volume which can be inspired after an ordinary respiration, is fifteen hundred cubic centimetres; and the supplemental or reserve air, the amount which can be forcibly expelled after an ordinary respiration, amounts to twelve hundred and forty to eighteen hundred cubic centimetres, you can readily see the value of respiratory exercises and also the utility of this second expiratory effort. The fact that in the majority of cases the tuberculous process begins at the apices has been explained by the supposed bad inspiratory function of this part of the lungs. Now I agree in this respect with Hanau, and consider the almost universally adopted statement of the deficient inspiratory function of the apices erroneous. On the contrary, these portions of the lungs inspire excellently well, almost too well, for dust and all sorts of micro-organisms enter there most easily and are found in large quantities in careful post-mortem examinations. What is faulty is the expiratory function of the apices. A thorough expiration, followed by a forced expiratory effort as described above, is, to my mind, the only possible way to improve this defect and prevent stagnation and congestion, which, as is well known, form excellent media for the development of bacilli.

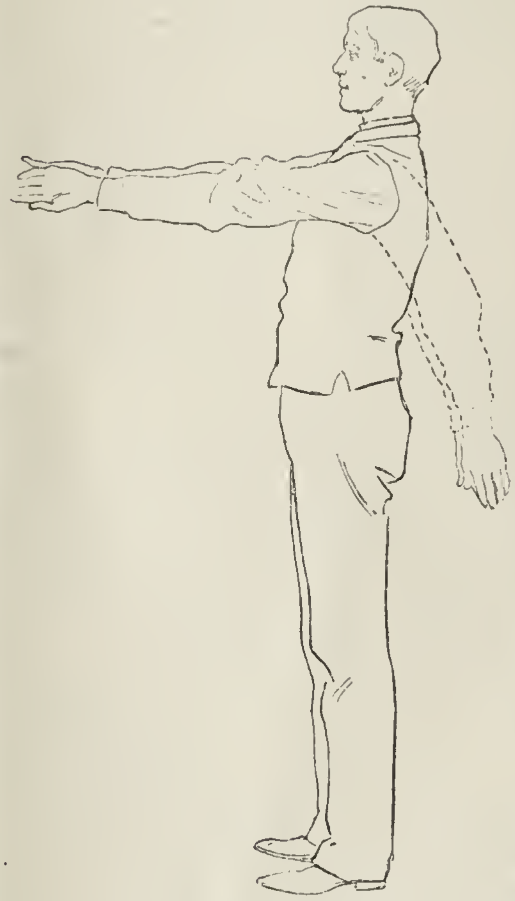

Fig. 2.—Third respiratory exercise.

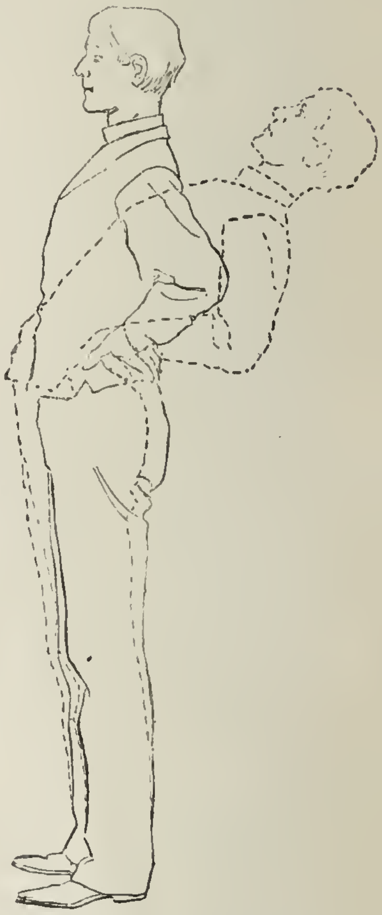

Fig. 3.—Respiratory exercise for persons with the habit of stooping.

To consumptives who have the habit of stooping I teach an additional exercise as follows: The patient makes his best effort to stand straight; he places his hands on his hips with the thumbs toward the front, and then bends backward slowly as far as he can during the act of inspiration. He remains in this position a few seconds while holding his breath, and rises again somewhat more rapidly during the expiration (Fig. 3).

When out walking patients can take the following exercise without attracting attention: Raise the shoulders as high as possible and then move them backward while breathing in. Hold the breath a moment in this position, and then lower the shoulders while breathing out. Follow this by the forced expiratory effort.

While it is true that whenever there are old pleuritic adhesions these extra respiratory efforts may cause moments of pain, the patient must bear in mind that these pains are not lasting and are in reality salutary, being caused by the loosening of the fibrinous bands.

By these breathing exercises the respiratory muscles become developed, the process of hæmatosis is rendered more complete, and the increased respiratory function helps to dissolve the mucus and makes cough and expectoration more easy. More advanced and very weak patients must content themselves with deep but quiet respirations without movement of the arms. Placing a pillow under the back of these patients so as to realize somewhat Sylvester's position, employed when artificial respiration is necessary, will be found a valuable adjuvant.

A persistent high temperature without apparent cause is often best treated by absolute rest in bed or on a reclining chair in the fresh air. In such cases, as well as during acute attacks of inflammatory processes or active hæmorrhages it is perhaps best to suspend all respiratory exercises; but for those chronic, continued, bloody expectorations due perhaps to a congestive process, regular breathing exercises act most beneficially. No less an authority than the great, immortal Traube was the first to prescribe this method for chronic hæmoptysis.

In emphysema of the lungs the exrcises must not be the same as those I have recommended as prophylactic and curative measures in pulmonary tuberculosis. There should be more abdominal breathing; instead of the inspiratory, the expiratory act should be prolonged; and particular attention should be paid to the second expiratory effort. During the inspiration a considerable pressure with the palms of the hands should be exerted over the chest, and holding the breath after the inspiration should be omitted.

For all patients alike the rules hold good never to take their breathing exercises when tired or immediately after a heavy meal; never to continue them to the extent of becoming tired; never to take them in a bad atmosphere; and not to take them at their caprice, but according to the directions of the physician.

In prescribing breathing exercises a careful medical examination is essential, and the effect of the exercises should be controlled by regularly repeated examinations.

It can not be impressed too strongly on the minds of consumptives, and those predisposed to the disease, that they should always seek environments where the air is as pure as possible. Lord Beaconsfield's celebrated words, quoted by English—"The atmosphere in which we live has more to do with human happiness than all the accidents of fortune and all the acts of government"—have, I think, a special meaning for this class of sufferers.

We have in aerotherapeutics and hydrotherapeutics most precious means of treating and preventing, in a large measure, this disease, which yields so little to medicinal treatment. May the little exposition I have given you of what I believe the best methods to apply these agents tend to encourage their more universal use. So may it be said that with Nature's kindest and most abundant gifts we are able to combat one of humanity's most bitter foes.

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STRABISMUS THEORIES.

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In the *New York Medical Journal* for May 9, 1896, Dr. Charles Stedman Bull, in his paper, quotes Hansen-Grut under the head of Strabismus Theories. "He thinks that the convergent position is not anatomical, but functional. . . . The existence of the position previous to the squint can not be proved, but only suspected. . . .

He believes divergent strabismus presupposes a divergent anatomical position of rest. If this is present the eyes pass into it when the innervation of convergence ceases. In convergent strabismus we have to deal not only with an active innervation of the internus, but of all the ocular muscles. The eye is turned outward by the actively innervated externus after dividing the internus. In divergent squint, on the contrary, which depends on complete relaxation of the convergence innervation, the action of dividing an externus is relatively slight, because the antagonist, the internus, is not innervated at all. And it is in this difference between the action of tenotomy of the externus and of an internus that he finds support for his innervation theory of strabismus."

I have for some time been of the opinion that strabismus convergens is functional, due to excessive innervation of the interni; and evidence is not wanting that at least some cases of convergent strabismus would be divergent under a complete suspension of the converging spasm. Although I fully concur in the logic of Hansen-Grut's deductions, my opinion that convergent strabismus is functional is derived from entirely different reasons, which I believe should give greater strength to his opinion than a mere concurrence would do.

Every oculist is familiar with the normal relation existing between the action of the ciliarics and the interni. When the ciliaries contract for the near point, the interni normally converge the eyes proportionately; and when they relax, conversely. In cross-eyes the contraction of the internus or interni far exceeds anything like the normal relation. The average case of cross-eyes will act as follows under the following experiment: Have a pair of plus 5 D. or 6 D. lenses fitted into a frame; place the patient in a good light, where the action of the eyes can be keenly observed, first holding the lenses in their frame above the eyes; observe carefully, at twelve or fifteen inches, the uncovered eyes and the amount of convergence, requesting the patient to look you in the eye; suddenly drop the plus glasses over the eyes and it will generally be observed that the convergence materially lessens. Now raise the glasses and a visible increase in the convergence will take place. The lessening of the convergence when the glass is over the eye is the result of the eye's effort to see more clearly through the dim glasses by forcibly relaxing the ciliary muscle, and with this forced relaxation follows to a certain extent the associated relaxation of the interni. The relaxation observed in this experiment is simply that which takes place momentarily, but a similar process continued through long periods of time will result in sufficient relaxation in some cases to entirely cure the strabismus.

It will not be necessary to detail the *modus operandi* in more than one case, although in all I shall report five.

Case I.—Woman, aged twenty years; convergence of about five millimetres. Vision: The left eye was normal, right eye, $\frac{20}{40}$. Sulphate of atropine, two grains to the ounce, was dropped into the eye once a day for three days, revealing 0.75 D. of hypermetropia. No appreciable relaxation of the interni was observed under the influence of the mydriatic. After its influence had passed off I gave her, for reading purposes, plus 5 D. glasses, with which it was impossible for her to read ordinary newspaper print farther than eight or nine inches. The patient was directed to constantly hold the book or paper at the most remote distance that she could possibly read it, and to read as long and as frequently as possible without creating too much discomfort. The ciliary muscle under these conditions was under a constant and forced effort to relax, or, in other words, "repression" of any latent ciliary spasm that might be existing. At times, when not reading, and for all other purposes of distant vision, the patient wore plus 2 D. spherical lenses, which gave but $\frac{20}{80}$ of vision. In two weeks there was sufficient relaxation of the interni to admit of fusion of objects at twelve inches through the plus 5 D. glasses. Three days later I was able to add to the reading glasses 8° of prism, base in, and still maintain the fusion at twelve inches. From this time on I continued to add as much prism, base in, as could possibly be fused for, establishing under these conditions a constant effort of the interni to relax their spasm, or repression of the interni. This process was continued for two months, when the patient was wearing, for reading purposes, 24° of prism, base in, combined with plus 5 D. spherical. There had also been established an ability to fuse at twelve feet under the plus 2 D. spherical or distance glasses, which now gave $\frac{20}{60}$ of vision. In three months from the time this case was taken fusion at all points was possible with 4° of prism, base in. A month later, in all four months, the patient could fuse for 8° of prism, base in, and under the plus 2 D. glasses, which at first gave $\frac{20}{80}$ of vision, it was now $\frac{20}{40}$. Vision was now normal in both eyes under a plus 1.50 D. It will be seen that this repression had relaxed the ciliary muscle to the extent of revealing 0.75 of a dioptre more of hypermetropia than the atropine revealed. In six months vision through the plus 2 D. lenses was $\frac{20}{30}$ and their continuance was advised, with the occasional use of the sphero-prisms before referred to for reading.

Case II.—Boy, aged sixteen years; left eye, vision normal; right eye, $\frac{20}{120}$. Atropine revealed one dioptre and a fourth of hypermetropia. Forty degrees of prism, base out, were required to bring about fusion either for the near or far point. Although fusion was brought about with 40° of prism, the eye showed a tendency to converge beyond this point when vertical diplopia was made with 8° of prism, base down, before the left eye.

This case was handled similarly to the preceding one, having plus 5 D. glasses for reading, with similar directions to constantly hold the reading at as remote a distance from the eyes as possible; with this exception it required a plus 2.50 D. spherical lens for distance purposes to bring about $\frac{20}{80}$ of vision, upon which I have settled, perhaps empirically, as being of a sufficiently high acuity. In twenty days there was sufficient relaxation of the interni to admit of the use of prisms, base in, for still further forcibly relaxing the interni. In three months fusion was obtainable for all distances. The eyes could also fuse for 8° of prism, base in. Vision in the left eye was now normal under one dioptre and three fourths, being half a dioptre more than that revealed by the atropine. Vision in the right eye had improved to the extent of $\frac{20}{80}$ from the original $\frac{20}{120}$. I left the patient wearing plus 2.50 D. glasses, which gave $\frac{20}{40}$ of vision. These kept the eyes perfectly straight. I expect that the vision will continue to improve by still further relaxation of the latent spasm.

Case III.—Woman, aged twenty-six years. The patient came to me wearing for myopia — 5 D. for the right eye and —1.50 D. for the left. The eyes fused at no point, there being an average of upward of five millimetres of convergence. The left eye was used exclusively for distance vision. When it was in commission the right eye took on the convergence. All the reading was done with the right eye through the —5 D. glasses, during which time the left eye took on the convergence. At twenty feet the acuity of vision of the right eye through the —1.50 D. glasses was $\frac{20}{30}$; that of the left, through the —5 D., was $\frac{20}{160}$.

The improvement of the convergence in this case was somewhat more rapid than in the preceding cases. In three weeks it had practically disappeared. During the first part of the treatment of this case no glasses were used for distant vision. I simply removed the minus glasses and paid no attention to the correction of the myopia. For reading purposes I used a plus 4 D. for the left eye and a plus 2 D. for the right. It will be seen that I did not make the differences between these glasses that actually existed in the myopic condition, from the fact that I suspected that the myopia was not anatomical, but due largely to ciliary spasm, and by not making the full differences in the glasses there was a tendency to relax the ciliary spasm in the right eye more than the left, thus in a measure reducing the anisometropia and making the refractive state of the eyes more even. As before stated, at the end of three weeks the convergence had disappeared with the exception of an occasional momentary spasm. Vision in the left eye was $\frac{20}{30}$ without the glasses, $\frac{20}{20}$ under minus one half D., giving an evidence of a reduction of one dioptre of the myopia during the three weeks.

In the practice of oculists I know it has not been uncommon for strabismus to disappear occasionally on the correction of some manifest refractive defect, the existence of the spasm in such cases being probably due to immediate reflex causes, which were sufficiently relieved by manifest correction to relieve the spasm. But the above cases were in no measure of that class. A step beyond this is another class of cases which oculists have found to yield by first determining, with the mydriatic, the existence of latent hypermetropia and then giving a full correction. Some cases of strabismus under such treatment have been relieved; but I trust the practice of others will verify my belief that the above method of rigid and forced repression of ciliary spasm at all points and times, in connection with the repression of the interni, will give much more universal relief in the cure of strabismus. So far as I know, this procedure is new.

In the two cases of strabismus following, not only was the strabismus reduced by repression, but further, they were converted into excessive cases of exophoria, in which both externi were ultimately tenotomied with a final result of fusion at all points.

Case IV.—Man, aged forty years; vision of right eye, $\frac{20}{20}$; left eye, $\frac{20}{80}$. With the correction of a three fourths D. cylinder, axis vertical, vision in the left eye was $\frac{20}{40}$. Mydriatic revealed one dioptre and a half of hypermetropia in the right eye, three fourths of a dioptre in the left, with three fourths of a dioptre of astigmatism, as noted, without the mydriatic. Convergence in this case was a little over four millimetres.

After ten days of repression, as in Case I, doing all reading in plus 5 D. glasses, and reducing the distant vision to $\frac{20}{80}$, I discovered the existence of a short upper muscle, or left hyperphoria. I gave attention to this for the next two weeks, concluding by making a tenotomy on the short upper muscle of the left eye. Fusion was now possible at the near point, as well as admitting of the use of prisms, base in, for repressing the interni. In a week more fusion was possible for all distances. The addition of prisms, base in, was continued for about two weeks more for reading, also for the far point, at which time 24° of prism, base in, were used for all distances. I now did a tenotomy on the right external rectus, reducing the possibility of fusion to 2°, base in. For reasons not stated in this article I continued the repression for both far and near points, and in six weeks after the last tenotomy the patient was again wearing 20° of prism, base in, with fusion possible at all points. I now made a tenotomy of the left external rectus, reducing the 20° of exophoria to esophoria, in which fusion was only possible by the use of 8° of prism, base out. The near point repression, with both prisms and sphericals, was continued, and in three weeks fusion was possible at all points without the aid of any prisms, base out. Vision was now normal in each eye with plus 1.75 D. spherical, no astigmatism being present. As a matter of safety I left the patient wearing plus 2.50 D. lenses, which gave $\frac{20}{40}$ of vision. Fearing, for a time, the possible return of some ciliary spasm, I deemed it best to keep the ciliary for a considerable length of time under repression.

It will be seen in this case that one fourth dioptre more of hypermetropia was revealed by this long-continued repression than that developed by the mydriatic; also, the three fourths of a dioptre of astigmatism had disappeared after the tenotomies, which I strive to account for on the theory that the cornea assumed a regular spherical contour when the strain on the extrinsic muscles was relieved by the tenotomies. If this conjecture is correct, the astigmatism depended on a distortion of the spherical contour of the cornea by the abnormal strain exerted by the extrinsic muscles.

Case V.—Boy, aged nineteen years. This case was brought by Dr. C. S. Hamilton, of Windsor, Ontario, in January, 1891. Vision of the right eye normal; left eye, $\frac{20}{80}$. Under the mydriatic, right eye hypermetropic one half D., left eye one and a half D. Fifty degrees of prism were required to bring about fusion, although there was a tendency to convergence under 90° of prism, which was the highest power that I could practically engage in this case. Plus 2 D. glasses were given this patient for general use, which gave $\frac{20}{80}$ of vision. Plus 5 D. glasses were used for reading. Considerably more repression at the near point was obtainable in this case from the fact that he was an inveterate reader. At the end of one week fusion at the near point was possible, and repression with prisms, base in, was begun. At the end of two weeks there had been sufficient relaxation of the ciliary to admit of the use, for distant vision, of plus 3 D., which still gave $\frac{20}{80}$ of vision, the reading glasses being increased to plus 6.50, in which the patient could read fairly well at twelve inches. Fusion was now possible at any distance. Extending through a period of two weeks more from this time the prisms were gradually increased, until single vision could be maintained under 24° of prism, base in, for all distances, when a tenotomy of the left external rectus was made, reducing the possibility of fusion to 4°, base in. The prism, base in, was continually increased for the next five weeks, until again 24° of prism, base in, was being worn. A tenotomy of the external rectus of the right eye reduced the induced exophoria to the bare possibility of fusion at any range. Two degrees of prism, base in, could not be accommodated for. The use of prisms, base in, was continued from this time for two months longer, and the patient could accommodate for 8° of prism, base in, for all distances.

It will be noted that in these cases I paid little or no attention to the differences of refraction in the two eyes; I overcorrected with plus lenses, instituting a constant effort to relax ciliary spasm; in this relaxation the refraction of the two eyes will come nearer approaching each other by such a method than by making the difference. At least, that is my opinion. The forced relaxation in the effort of the eye to see through the strong plus lenses, as above explained, is a negative action, necessitating the constant relaxation of ciliary impulse; also the use of prisms, base in, brings about a negative action, the suspension of nerve impulse to the interni which, in some cases, has become a locked or fixed impulse, perhaps similar to the condition existing in torticollis. The gradual relaxation of the interni in this case is due to the slow forced suspension of nerve impulse, and this negative action in both instances I have termed repression, for it is a constant effort to repress excessive nerve impulse. My reason for carrying repression to so high a point can not be explained in this paper further than to say that it was for the purpose of observing and acquiring other physiological changes.

It is not my intention to discuss the following class of cases in this paper further than to give them a passing mention.

I have repeatedly and successfully resorted to the above-described method of repression in cases of convergence and esophoria due to apparent overcorrection by tenotomies of the externi; also in some cases of overcorrection in the effort to regulate the differences between the superior and inferior recti; but in many efforts I have never succeeded in any measure by converse methods in relieving outward deviations resulting from internal tenotomies.

The most important element in any case similar to these is the patient, who should faithfully follow the advice given by his physician. He must either be possessed of a sufficient amount of intelligence to partly understand the logic of the process, or else have a sufficient amount of confidence in his physician to follow his directions implicitly.

Some of the conclusions that might arise from the above-mentioned cases are:

That corneal astigmatism may be due to extrinsic muscle tension.

That cross-eye is functional and not anatomical.

That esophoria is functional and not anatomical.

This seriously raises the question of the advisability of surgical interference in either case, but especially in cases of esophoria.

This in no way questions the veracity of the reports of a large number of cases where marked physical relief has followed tenotomies of the interni, and I myself can verify the fact that such relief has followed in some of my earlier cases. Here, for a moment, it might seem that the physiological results of tenotomies on the interni in esophoria strongly antagonized the theory that esophoria was functional and not anatomical, and yet it does question whether we have not increased the anatomical defect rather than relieved it by tenotomy of the interni. To account for this relief, which follows the increasing of the anatomical defect, I shall arbitrarily assume a unit of nerve strain and a hypothetical case for illustration.

In this case the optic axes would diverge 10° if the eyes were in an absolute anatomical state of rest, or in the total absence of all innervation to all of the ocular muscles. To overcome this outward deviation and bring the eyes to a proper position the interni exert ten units of nerve strain, the first few degrees requiring less nerve strain in proportion, and as the degrees increase in number the proportion of strain for each degree increases. For the ten degrees I assume in this case it requires collectively ten units of strain to make the optic axes parallel. In the externi we have an anatomically short muscle, a static condition of tension existing. On the interni we have a dynamic force at play in antagonism to it. The greater the dynamic force applied to the internus the greater the tension on the static side, or that of the short muscle. The resistance in the short muscle is limited by structural integrity, while that on the dynamic side is comparatively without limit. The irritation or stimulation in the cortical centres resulting from this contention naturally gives rise to increased innervation in the entire ocular apparatus. Through high development from accommodative exercise the interni get the larger proportion of this increase of nerve force, and under such conditions there is a natural tendency of the eyes to functionally converge. The interni have now taken on ten units of strain more than necessary. Static resistance in the externi is no longer sufficient to maintain fusion, so, through the stimulus for fusion, the externi now take upon themselves ten degrees of dynamic or nerve strain. This increased contention through time continues to multiply until we have a hundred units of nerve strain on the interni, met by ten units of static resistance in the externi, plus ninety degrees of dynamic counterstrain. To what point this tension of strain and counter-strain could multiply itself is purely speculative, but I am convinced that just this condition exists in esophoria, the interni or stronger dynamic side always having slightly the advantage, which, in a measure, is held in check by fusion stimulus, so that when vertical diplopia is made in such a case, the fusion stimulus being lost, there is a strong evidence of inward deviation.

No matter what methods of test are resorted to, they will all show this case to be one of esophoria, or convergent deviation of the optic axes, which would be divergent under an anatomical state of rest.

Perhaps it is not necessary, and yet I will give a simple illustration of strain and counter-strain: A rope forty feet long is turned around a post; each end is held by a boy, who, for some reason, desires to keep just twenty feet of rope on his side of the post. The rope, to start with, being evenly divided, a minimum tension permits each to have his twenty feet of rope. Now, the stronger boy begins to pull ten pounds harder than necessary, which would naturally give him more rope. This requires the other boy to meet this dynamic force by ten pounds of counter-pull, or resistance. This now stimulates the stronger boy to increase his pull, necessitating an increase of effort on the other to prevent his losing his position. Each continues, through pride, to maintain his twenty feet of rope, but through gradually increasing strain and counter-strain both are now pulling one hundred pounds each, where but very few pounds would suffice. Now, if the stronger boy can be quieted and induced to diminish his effort, the weaker boy will be more than willing to meet him by diminishing his effort, until the efforts of both have been reduced again to a minimum, each still having his twenty feet of rope.

In this hypothetical case, all tests now giving us undoubted evidence of a tendency of the eyes to converge, without further thought than the tests, it is natural for us to assume that the interni or internus is short. We now proceed with a tenotomy of the interni, more or less complete, until we find that the tendency to converge has ceased. If the tenotomy is a partial one, we have not increased the anatomical defect. If complete, we probably have increased the anatomical defect. In either case, how are we to account for the first marked and happy results that frequently follow these operations?

If it be a partial tenotomy, we have divided the greater share of the muscle, leaving uncut the tendon at its two extreme sides. So, through the greater part of the muscle, we have destroyed the integrity and continuity of the nerve impulse. It is, mechanically, partially cut off. We have thus possibly reduced the dynamic pull seventy-five of our assumed units. This induces a cessation of seventy-five units of counter-pull, making in all a hundred and fifty. Thus, for the time being, the nerve centres are relieved of the excessive tax of this one hundred and fifty units of strain, but when the effects of the surgery have passed away and the nerve communication has re-established itself again, it can be readily seen that it will be natural for the old strain to reassert itself.

In the case of a complete tenotomy, sufficient to increase the anatomical defect ten degrees, making in all twenty in this case, for the same reasons as stated in the partial tenotomy, there is a cessation of the dynamic pull, in the stronger muscle, of eighty units out of the hundred, the remaining pull of twenty units being effected through its remaining capsular and other attachments. The nerve centres are now relieved of eighty units of direct strain in the interni, with fully that amount of counter-strain in the externi, making in all a hundred and sixty units of strain. In this operation, after recovery from the surgery, the old conditions of strain and counter-strain may possibly re-establish themselves, and it can readily be seen if they do so the evil conditions would be much more emphasized; but there is also a likelihood of this case ultimately passing into one of a marked case of exophoria.

Sometimes the immediate effects on the nervous system following these internal tenotomies have been truly wonderful, and enough to make both patient and physician enthusiastic, but a long experience with the after results has been quite sufficient to discourage many operators from further effort. The question naturally suggests itself here, if the above reasoning is true, is it possible to accomplish the happy ends by any other method which will give more permanent results?

Without entering into the details of this part of the subject, I would answer: by slow, perhaps tedious and continued repression, in a manner similar to that illustrated in the strabismus cases related above, this excessive dynamic pull of the interni can be reduced by repression. In fact, repression is a method that I continually resort to, being guided by symptoms or physiological changes, from the fact that manifest findings can never be relied on as telling the truth.

I believe that our universal error, or difference of opinions, has been in attributing all manifest findings to static conditions, where they were largely due to dynamic conditions.

905 Pullman Building.

A CASE OF EXTREME DEAFNESS IN WHICH GREAT IMPROVEMENT IN THE HEARING FOLLOWED THE USE OF PILOCARPINE.*

By GORHAM BACON, M. D.

The following case seems to me to be an instructive one on account of the excellent result obtained from hypodermic injections of pilocarpine:

Laurence D., aged thirty-three years, came to consult me February 1, 1896, and said that he had had a chronic discharge from both ears since he was ten years of age, as a result of scarlet fever. His hearing was fairly good until last October, when he had typhoid fever. At that time the hearing became so much worse that he could hear nothing. When examined I found both drumheads mostly destroyed, and the ossicles bound down by adhesions. There was a slight discharge from the ears.

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* Read before the American Otological Society at its thirtieth annual meeting.

Hearing Distance.—He could only hear with the right ear by means of a trumpet. Bone conduction was very much impaired.

I gave him a very unfavorable prognosis, but told him if he would come into the infirmary for six weeks at least I would try hypodermic injections of pilocarpine. I began with small doses and gave him one injection of the remedy each day, gradually increasing the dose up to three quarters of a grain. He perspired freely at each time, and I always had him put to bed before administering the remedy, and kept him there until all physiological effects had passed off.

He remained in the hospital two months, when there was some decided improvement in the hearing, so that it was possible to carry on a conversation with him without the aid of the hearing trumpet. At this time the bone conduction was better than the aerial for both ears. He had some nausea, and in consequence the treatment was discontinued. He was sent away from the hospital for two weeks, as his health began to suffer from the treatment, and he was quite weak. He returned, however, again, and the use of the same remedy was continued for a short time.

May 7th.—When first seen it was impossible to make him hear with the left ear even by talking through the trumpet. To-day, however, he heard raised voice at a distance of one foot and a half with the left ear, and one foot with the right ear. Right ear, acoumeter heard at two inches. Left ear, acoumeter heard at ten inches.

30th.—Under ether to-day, I removed the remnant of the drumhead and the ossicles that were bound down, and on June 15th the ossicles on the right side were excised. There was after this a still greater improvement in the hearing.

November 24, 1896.—The hearing has been very good all summer, and he has been able to secure a position in business again, and attends to his work without difficulty. He hears a slightly raised voice a distance of ten feet with the left ear and fourteen feet with the right. Acoumeter, right ear, sixteen inches. Left ear, six inches.

Bone conduction excellent. Galton whistle heard well.

Koenig rods, 20,000 v. s. and 25,000 v. s. heard a distance of fifteen feet with each ear; 30,000 v. s., right ear, seven feet; left ear, twelve feet; 35,000 v. s. heard at two inches with each ear.

The best results with pilocarpine, according to my experience, have been obtained in cases of sudden deafness due to syphilis. I have been disappointed with the remedy in cases of chronic catarrhal otitis media with loss of bone conduction. I have, however, in such cases usually administered it by the mouth. I think that pilocarpine should always be given hypodermically in order to obtain the best physiological effects. The dose should be a very small one at first and gradually increased in order to watch its effect on the patient, as it is certainly in some cases a dangerous remedy. The patient, each day before the administration of the drug, should be put to bed and kept there for two hours, or until the physiological effects have passed off.

I think that perhaps my lack of success in the other cases with pilocarpine has been due to the fact that I have not continued it for a sufficiently long period of time. This patient did not begin to show any signs of improvement until nearly two months had elapsed after he entered the hospital.

He had great loss of bone conduction when first seen, which was probably due to the attack of typhoid fever, as his hearing was fairly good before that time. There was a still further improvement in the hearing distance after excision of the ossicles.

Therapeutical Notes.

A Pill for Palpitation of the Heart.—Huchard (*Archives de médecine et de pharmacie militaires*, June, 1897; *Lyon médical*, June 27, 1897) says that, of the various diseases that are accompanied by palpitation, incipient acute aortitis, acute endocarditis, acute pericarditis, adhesions of the pericardium, and mitral stenosis or insufficiency are benefited by digitalis or its substitutes. He gives the following formula:

℞	Quinine hydrobromide	1 drachm;
	Powdered digitalis, Extract of convallaria, } each	½ “

M. Divide into forty pills. From two to four to be taken daily.

Cornutine in the Spermatorrhœa and Anaphrodisia of Neurasthenia.—Bozolo and Mangianti, according to the *Journal de médecine de Paris* for June 27th, recommended the following:

℞	Cornutine citrate	0·045 grain;
	Prepared chalk	45 grains;
	Tragacanth	90 “

M. Divide into twenty pills. From two to four pills to be taken daily.

An Ointment for Hæmorrhoids.—In the *Journal de médecine de Paris* for June 27th we find the following formula, attributed to Kossoberdckji:

℞	Chrysarobin	11 grains;
	Iodoform	4½ “
	Extract of belladonna	9 “
	Vaseline	210 “

M. To be applied two or three times a day.

Ichthyol in the Treatment of Ulcers of the Leg.—Elden (cited in the *Journal des praticiens* for July 3d), after first securing an aseptic and scrupulously clean condition of the ulcer, cauterizes it with nitrate of silver and applies borated dressings. Then, when the ulcer has begun to diminish in size, he says, preparations of ichthyol exert a very favorable action on it. It may be dressed daily with an ointment made according to this formula:

℞	Carbolic acid	4 parts;
	Boric acid	20 “
	Powdered camphor	15 “
	Ichthyol	40 “
	Oil of sweet almonds	19 “
	Zinc ointment	200 “

M.

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THE GRADUATION THESIS.

Many of our readers, at least many of the younger ones, know that for some years past our leading medical schools have attached less and less importance to the graduation thesis, and that some of them have ceased to require it. The matter is now under discussion in Paris. In a recent issue of the *Progrès médical* there is an article by that vigorous and enthusiastic writer, M. Marcel Baudouin, a man well and favorably known to the American profession, in which he declares that that journal has always favored the discontinuance of the thesis requirement, and quotes to the same purpose from a note signed by M. Chevallereau, formerly a hospital interne and now the editor in chief of the *France médicale.* M. Chevallereau declares that many of the students get their theses written for them, and that a few hospital internes make a considerable income by writing them. He acknowledges that in times past he himself made snug little sums—from forty to eighty dollars apiece—by writing theses. He even calls to mind a certain *chef de service* who amused himself with dictating theses to students in an office adjoining the chief ward of his service, over the door of which he might have placed the sign *Thesis Factory.*

The students that get their theses written for them, says M. Chevallereau, are in some instances very interesting young fellows hastening to grasp a situation that is eluding them, but for the most part they are lazy or ill-endowed individuals who, having failed in several examinations, have reached an age at which work is becoming harder and harder for them and are quite content to buy the means of passing the last examination that they have to undergo. It is heart-rending, M. Chevallereau continues, to have to say that any blockhead whatsoever may, with time and perseverance, obtain the degree of doctor of medicine. And, yet, he exclaims, we find our profession crowded! He would refuse further examinations to those who have failed three times in any one; or it might be better, he thinks, to make the preliminary examination a serious weeding-out process.

Commenting on this last proposition, M. Baudouin says that it would be indispensable to have the examiners absolutely impartial, and this desideratum could be arrived at only by overturning a great many things. He thinks it would be necessary to create a special board of examiners consisting of persons not entitled to practise medicine; otherwise there would be a relapse into the present injustices.

Diverging from his strict theme, M. Baudouin asks what the use is of trying to block the inevitable course of events. In spite of us, he declares, Anglo-American ways are invading us, because they are practical, rational, eminently intelligent, and essentially human. Why, he asks, should we always be dragging after us the last tatters of a Græco-Latin civilization that is absolutely used up?

THE ACTION OF SIMPLE LAPAROTOMY ON PERITONEAL TUBERCULOSIS.

Dr. Tschmarke, of Magdeburg, contributes to the *Centralblatt für Chirurgie* for June 12th a highly appreciative abstract of an article by Dr. G. Gatti, published in the *Archiv für klinische Chirurgie.* The article is founded on the author's numerous and painstaking experiments in the pathological laboratory of the Ospedale Mauriziano in Turin. It seems that so long ago as in 1894 Gatti opposed the general assumption that in consequence of the mechanical or chemical irritation of laparotomy a retrogression of the tubercles took place and a regenerative process set in in consequence of an infiltration of leucocytes and phagocytosis with a subsequent active development of connective tissue. He himself attributed prime importance to dropsical degeneration of the epithelioid cells, vacuolization, which ultimately attacked the nuclei and occasioned the destruction of the cells. In 1895 Mazzoni described similar processes and concluded that the retrogression of the nodules might be brought about either by connective-tissue substitution or by cystic degeneration.

Gatti's experiments were made on guinea-pigs, rabbits, and dogs. The material employed in the inoculations was either bits of the omentum of tuberculous guinea-pigs or pure cultures. At every laparotomy pieces of the peritonæum and of the great omentum were removed for examination. After a number of days, either the animals were killed or a second laparotomy was performed. It was found that fibrous peritoneal tuberculosis in the guinea-pig was curable by means of simple abdominal section, but the cheesy variety was not, although its further development might be checked. The same was found to be true of rabbits, but in them the presence of scattered cheesy nodules did not preclude a cure, because these nodules might be rendered innocuous by a slow process of calcification. The experiments on dogs were decidedly the most important.

They presented pathological and other phenomena similar to those observed in the human subject; moreover, dogs were found to serve best for these experiments, since in them the tuberculosis was slower in its course and systemic infection occurred later than in other animals. It was found in the experiments on dogs that laparotomy was of no use if it was performed too soon, before the fibrous tuberculosis had reached its full development.

Gatti concludes that the cure does not depend on inflammatory reaction and an active growth of connective tissue, but on the fact that the epithelioid cells are destroyed by a slow dropsical degeneration and then absorbed, the round cells and the bacilli gradually disappearing at the same time, so that finally only the preexisting connective-tissue stroma with its vessels remains. Abdominal section, he says, sets up conditions that either destroy or enfeeble the tubercle bacilli, in either case hindering their further multiplication. The proteins of the bacilli that have been killed or damaged by the operation then induce a slow degeneration of the epithelioid cells, and this underlies the histological retrogression of the tubercle. The fact that in every instance a reddish serous exudate occurs in the abdominal cavity suggests the idea that this blood-serum, which is known to possess great germicidal power, kills the bacilli and allows the above-described processes to set in.

LARGE DOSES OF ETHER IN THE TREATMENT OF URÆMIC DYSPNŒA.

After all that has been said of the injurious action of ether on the kidneys, it is interesting to learn that M. Lemoine and M. Gallois, in a communication made to the Société de biologie, an abstract of which appeared in the *Journal des praticiens* for July 3d, recommend its use in large doses in the treatment of various forms of nephritis, especially as a powerful means of mitigating and even curing dyspnœa due to uræmia. The authors state that one of them has employed this treatment for nearly ten years, and has succeeded in arresting with it the gravest forms of uræmic respiratory disturbances, provided there was no actual renal lesion. It may be presumed that by this the authors mean no advanced lesion, for they go on to say that uræmia due to acute nephritis, to acute renal congestion, to renal congestion occurring in the course of sclerotic nephritis, or to the infectious forms of nephritis stands the greatest chance of being cured by means of the ether treatment. They aver that it is only the uræmia depending on slow disorganization of the kidney by arteriosclerosis that does not yield to this treatment, although the comatose and convulsive forms are not readily affected by it.

The treatment consists in giving, every half hour or every hour, according to the severity of the case, two or three teaspoonfuls of ether in a little sweetened water. It is better, the authors say, to give part of the ether subcutaneously, for example, to give a subcutaneous injection of two or three cubic centimetres of ether every three hours instead of the doses then due by the mouth. They say that they have given to some patients more than three hundred cubic centimetres without producing the least untoward effect, even drunkenness, but it does not appear from the abstract into how many doses this amount was divided or whether it was given hypodermically or by the mouth. M. Lemoine and M. Gallois state that the ether occasions an abundant diuresis, improves the pulse, and relieves the respiratory spasm. They regard its employment as worthy to be classed with that of bloodletting so far as the result is concerned.

MINOR PARAGRAPHS.

METHYLENE BLUE IN THE TREATMENT OF THE PAINS OF ATAXIA.

In the *Journal des praticiens* for July 3d we find an abstract of a recent communication to the Société de biologie by Dr. G. Lemoine, who states that he has made nine trials of methylene blue in the treatment of the pains of ataxia. In two cases there was no good result. Of the seven others, in five there was great diminution of the intensity and frequency of the pains, and in two there was complete and prolonged sedation. Those that yield most quickly, he says, are the lightning pains in the limbs and the girdle pains; those that are most obstinate are the visceral pains, especially those of the stomach and the rectum; those of the bladder subside rather readily. In the two cases in which the remedy failed altogether, the pains were exclusively gastric. M. Lemoine says that the action of the drug is very prompt; the pain begins to subside in two or three hours after the urine has become colored blue. Another advantage is that the effect lasts for several days after the administration of the drug has been stopped, and sometimes for a number of weeks.

FIBRIN AS A VULNERARY.

At a meeting of the Paris Académie de médecine held on June 29th (*Journal des praticiens*, July 3d) a communication attributed to M. Cornil and M. Carnot was presented on the subject of the repair of loss of hepatic substance by means of lumps of fibrin. Notwithstanding the alleged dual authorship of the communication, it begins with "I have demonstrated" (*J'ai démontré*). The authors or author have demonstrated that fibrin is the primary bond of union between divided tissues. It spreads and seals up the orifices of the vessels. Cells of the epithelial type develop on its surface. If a fragment of aseptic fibrin is introduced into an animal's peritonæum, the morsel will be found abounding in white globules at the end of a few days; moreover, there forms on its surface an investment of endothelial cells. At the end of a week there are new-formed vessels and the mass itself is transformed into connective tissue. If, after a loss of hepatic substance has been occasioned in the dog, a piece of fibrin is placed between the lips of the wound of the liver, analogous phenomena are shown.

PHYSIOLOGICAL ALBUMINURIA AND THE BICYCLE.

It seems from certain observations made by Müller (*Münchener medicinische Wochenschrift*, 1896, No. 48; *Centralblatt für innere Medicin*, July 3, 1897) that in many instances the exercise of bicycling gives rise to an albuminuria that can not be distinguished with the microscope from that of genuine kidney disease, but one that must be looked upon as physiological, since it disappears within a few days after the cessation of the exertion, leaving absolutely no signs of disease. Müller's observations were made on twelve bicyclists, eight of whom he calls trained and four untrained. Among the eight trained wheelmen there was only one whose urine contained albumin before the exercise, but after it the urine was albuminous in seven. In six of them, including the one whose urine was free from albumin, there were at the same time present in the urine casts in numbers as great as are generally met with in acute or chronic parenchymatous nephritis; and the two others had a few hyaline casts. Most of the casts were hyaline; the minority showed distinct renal epithelia and were granular. Free renal epithelia were found in every instance. White blood-corpuscles appeared sparingly, but red corpuscles were not met with at all. Among the four untrained wheelmen, in all of whom the urine was free from albumin before the exercise, two showed albuminuria and one cylindruria after riding from an hour and a half to three hours.

THE INFLUENCE OF THE RÖNTGEN RAYS ON THE EYE.

At a recent meeting of the Paris Société de médecine et de chirurgie pratiques (*Presse médicale*, June 30th), M. Bardet, who had been much occupied with Röntgen-ray examinations, reported that he had suffered with impaired vision accompanied by scotomata, and that M. Meyer, whom he had consulted, had observed in both eyes traces of extravasation and a congested state of the retina, which he attributed to the action of the rays.

GONORRHŒA AS A CAUSE OF STERILITY.

In the *Centralblatt für Gynäkologie* for July 3d there is an abstract of an article by Dr. B. Vedeler, published in the *Norsk Magazin for Lägevidensken* in 1885. Vedeler analyzed the cases of three hundred and ten women who had been married for at least a year without becoming pregnant. Seventy-two of them had been married ten years or over, and the rest three years on an average. He examined fifty of these women's husbands, and found that thirty-eight of them had had gonorrhœa and thirty-four of them had infected their wives. He infers that, in the whole number of husbands, there must have been two hundred and thirty-five who had had gonorrhœa, and that two hundred and ten of them must have infected their wives. He regards this inference as supported by the fact that in a hundred and ninety-eight of the women he found the same inflammatory lesions as in the thirty-four who were known to have contracted the disease from their husbands.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 20, 1897:

DISEASES.	Week ending July 13.		Week ending July 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	23	2	14	6
Scarlet fever	103	8	108	5
Cerebro-spinal meningitis	1	0	0	1
Measles	175	7	173	8
Diphtheria	204	43	173	23
Croup	4	1	9	3
Tuberculosis	180	107	161	116

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox and yellow fever were received in the office of the supervising surgeon-general during the week ending July 17, 1897:

Small-pox—United States.			
Memphis, Tenn	July 3–10	2 cases.	
New York, N. Y	July 3–10		1 death.
Toledo, Ohio	June 1–30	4 "	1 "
Small-pox—Foreign.			
Glasgow, Scotland	June 19–26	1 case.	
Madrid, Spain	June 16–23		4 deaths.
Pernambuco, Brazil	April 25–May 29		17 "
Sagua la Grande, Cuba	June 26–July 3	80 cases,	3 "
Habana, Cuba	June 1–30		9 "
Warsaw, Russia	June 19–26		4 "
Odessa, Russia	June 19–26	4 "	
Zurich, Switzerland	June 19–26	4 "	
Manaos, Brazil	June 12–26	103 "	12 "
St. Petersburg, Russia	June 19–26	8 "	1 death.
Matanzas, Cuba	June 23–July 7		2 deaths.
Hong Kong, China	May 22–29		2 "
Osaka and Hiogo, Japan	June 5–12	1 case.	
Montreal, Canada	June 25–July 2	2 cases.	
Yellow Fever.			
Santiago de Cuba	June 19–July 3		38 deaths.
Mazanillo, Cuba	June 8–15		1 death.
Cienfuegos, Cuba	June 20–July 4		6 deaths.
Rio de Janeiro, Brazil	June 5–12	3 cases.	
Sagua la Grande, Cuba	June 26–July 3	38 "	2 "
Habana, Cuba	June 1–30		181 deaths.
Matanzas, Cuba	June 23–July 7		12 "
Para, Brazil	June 19–July 3		7 "

The Upper Peninsula Medical Society held a meeting at Sault Ste.-Marie on July 8th and 9th, under the presidency of Dr. J. Vandeventer, of Ishpeming. Besides the president's address, the programme included the following: Some Points about Appendicitis, by Dr. J. H. Carstens, of Detroit; Sepsis, by Dr. W. G. Young, of Grand Rapids; Sex and Diagnosis of Sex in Early Pregnancy, by Dr. F. M. Foreman, of Gladstone; Gas in Abdominal Tumors, by Dr. Hal C. Wyman, of Detroit; The Treatment of the Fever of Pneumonia, by Dr. George D. Beach, of Beacon; Modified Milk for Infant Feeding, by Dr. C. H. Johnston, of Detroit; The Diagnosis of Brain Lesions, by Dr. Allen De Villerss, of Toledo; Electricity as Means of Diagnosis, by Dr. J. R. Roseborough, of Rapid River; Medical Legislation, by Dr. E. L. Shurley, of Detroit; Puerperal Insanity, by Dr. Samuel Bell, of Newberry; The Coma of Irritation and the Coma of Compression, by Dr. William Fuller, of Grand Rapids; Diphtheria; its Treatment and Report of Cases, by Dr. C. Worden, of Ishpeming; Septic Endometritis and its Complications, by Dr. A. E. Booneville, of Munising; and a paper by Dr. J. B. Murphy, of Chicago.

The Medical Society of the County of Chautauqua, N. Y., held its annual meeting in Chautauqua on July 13th, under the presidency of Dr. E. S. Rich. The annual election of officers resulted as follows: President, Dr. Morris N. Bemus, of Jamestown; vice-president, Dr. V. M. Griswold, of Fredonia; secretary and treasurer, Dr. Charles A. Ellis, of Sherman; censors, Dr. T. D. Strong, of Westfield, Dr. W. M. Bemus, of Jamestown, and Dr. J. Murphy, of Sherman; delegates to State society, Dr. E. S. Rich, of Kennedy, and Dr. C. A. Ellis, of Sherman. The president's address was entitled Notes of Puerperal Eclampsia. Dr. W. W. Hotchkiss, of Jamestown, read a paper upon Tonsillitis, and Dr. T. D. Strong, of Westfield, read one upon Influenza. Dr. Lucien Howe, of Buffalo, presented a case of diphtheritic membrane of the eyelid in a boy, which had existed for many months. In the evening Dr. R. R. Ross, superintendent of the Buffalo General Hospital, lectured upon the X-rays, illustrating with the apparatus as he proceeded and taking a photograph of a fractured femur at the close.

The Twelfth International Medical Congress, Laryngological Section.—At a special meeting of the Oto-rhino-laryngological Society of Moscow, held on the 21st of June, it was decided that a "bureau" should be instituted for the convenience of members of the section. The object of this bureau will be to give all information needed, not only as to matters concerning the congress, but as to all other matters concerning which visitors may require assistance or information. This reference bureau will be open from 7 to 9 P. M. from the 13th to the 19th of August, in the Doctors' Club (Bolshaya Dmitroffka), and during the meetings in the room of the section, XII b. (laryngo-rhinology).

The chairman of the American National Committee, Dr. A. Jacobi, informs us that, in a letter dated July 7th, Dr. H. Kümmell, surgical director of the New General Hospital (Neues Allgemeines Krankenhaus) of Hamburg, in the names both of the local Hamburg and the general imperial committees of the Twelfth International Medical Congress, begs to invite American congressists to inspect the hospital and the new hygienic establishments. The medical men will be at the hospital daily from 10 A. M. to 2 P. M. Still, they request American congressists to kindly notify them, if possible, of the days of their intended visits.

A New York City Civil Service Examination for medical inspectors will be held in the new Criminal Court Building on Wednesday, August 4th, at 10 o'clock in the morning.

The British Medical Association.—Dr. Frederick Holme Wiggin, of New York, has been appointed a delegate to the Montreal meeting from the New York State Medical Association.

Change of Address.—Dr. W. B. Thompson, to No. 154 Kent Street, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 11 to July 17, 1897:*

Arthur, William H., Captain and Assistant Surgeon, will be relieved from duty at Fort Myer, Virginia, on October 1, 1897, and is ordered to Philadelphia to assume the duties of attending surgeon and examiner of recruits, relieving Ebert, Rudolph G., Captain and Assistant Surgeon. Captain Ebert, on being thus relieved, is ordered to report October 4th for examination for promotion, and, upon completion thereof, is ordered to take station at Fort Missoula, Montana, relieving Crosby, William D., Captain and Assistant Surgeon. Captain Crosby, on being thus relieved, is ordered to Fort Preble, Maine, for duty, relieving Harris, Henry S. J., Captain and Assistant Surgeon.

Brooke, Benjamin, First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Thomas, Kentucky, and ordered to the Army and Navy General Hospital, Hot Springs, Arkansas, for temporary duty at that hospital.

Brown, Paul R., Major and Surgeon, is ordered to report to Byrne, Charles C., Colonel and Assistant Surgeon General, president of the army retiring board appointed to meet at Fort Columbus, N. Y., for examination by the board.

Corbusier, William H., Major and Surgeon, upon the arrival at Fort Monroe, Virginia, of Captain Richard, will be relieved from duty at that post, and is ordered to Angel Island, California, relieving Pope, Benjamin F., Major and Surgeon. Major Pope, on being thus relieved, is ordered to Columbus Barracks, Ohio, for duty, relieving Pilcher, James E., Captain and Assistant Surgeon. Captain Pilcher, on being thus relieved, is ordered to Fort Crook, Nebraska, for duty.

Harris, Henry S. J., Captain and Assistant Surgeon, on being relieved at Fort Preble, is ordered to Fort Washakie, Wyoming, relieving Clarke, Joseph T., Captain and Assistant Surgeon. Captain Clarke, on being thus relieved, is ordered to Columbus Barracks, Ohio.

Keefer, Frank R., Captain and Assistant Surgeon, is relieved from duty at Washington Barracks, D. C., to take effect upon the expiration of his present leave of absence, and ordered to Fort Sam Houston, Texas, for duty.

Gandy, Charles M., Captain and Assistant Surgeon, upon the arrival of Stark, Alexander N., First Lieutenant and Assistant Surgeon, at Washington Barracks, D. C., is relieved from duty at that post, and ordered to Fort Mason, California, relieving Wells, George M., Captain and Assistant Surgeon. Captain Wells, on being thus relieved, is ordered to Fort Ringgold, Texas, for duty.

Kieffer, Charles F., Captain and Assistant Surgeon, upon the arrival of Captain Pilcher at Fort Crook, Nebraska, is ordered to Fort Meade, South Dakota, for duty at that post.

Lewis, William F., First Lieutenant and Assistant Surgeon, upon the arrival of Lieutenant Richards at Fort Apache, Arizona, is ordered to Fort McPherson, Georgia, for duty.

McCaw, Walter D., Captain and Assistant Surgeon, upon the arrival of Captain Wells at Fort Ringgold, Texas, is relieved from duty at that post, and ordered to Fort Thomas, Kentucky, for duty.

McCulloch, Champe C., Captain and Assistant Surgeon, is relieved from duty at the Army and Navy General Hospital, Hot Springs, Arkansas, to take effect upon expiration of his present leave of absence, and ordered to Fort Barrancas, Florida, for duty, relieving Gorgas, William C., Captain and Assistant Surgeon. Captain Gorgas, on being thus relieved, is ordered to take station at New York city, and assume the duties of attending surgeon and examiner of recruits, relieving Richard, Charles, Captain and Assistant Surgeon. Captain Richard, on being thus relieved, is ordered to Fort Monroe, Virginia.

Richards, William E., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Grant, Arizona, and ordered to report on September 20th for duty at Fort Apache, Arizona.

Stark, Alexander N., First Lieutenant and Assistant Surgeon, upon the arrival of Captain Keefer at Fort Sam Houston, Texas, is relieved from duty at that post, and ordered to Washington Barracks, D. C., for duty.

Stiles, Henry R., First Lieutenant and Assistant Surgeon, upon the arrival of Captain Kieffer at Fort Meade, South Dakota, is ordered to Columbus Barracks, Ohio, for duty at that post.

Ten Eyck, Benjamin L., Captain and Assistant Surgeon, upon the arrival of Lieutenant Stiles at Columbus Barracks, Ohio, is ordered to the Army and Navy General Hospital, Hot Springs, Arkansas, for duty.

Wyeth, Marlborough C., Captain and Assistant Surgeon, upon the arrival of Lieutenant Lewis at Fort McPherson, Georgia, will take station at Baltimore, and assume the duties of attending surgeon and examiner of recruits, relieving Carter, W. Fitzhugh, Captain and Assistant Surgeon. Captain Carter, on being thus relieved, will report on October 4th for examination as to his fitness for examination for promotion, and, upon completion thereof, is ordered to Fort Assiniboine, Montana, relieving Bushnell, George E., Captain and

Assistant Surgeon. Captain Bushnell, on being thus relieved, is ordered to take station at Boston, and assume duties of attending surgeon and examiner of recruits.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending July 17, 1897:*

HERNDON, C. G., Surgeon. Ordered to special duty at the naval rendezvous, Duluth, Minn., July 19th.

PALMER, S. B., Assistant Surgeon. Detached from the Texas and ordered to the Annapolis, July 20th.

PLEADWELL, F. L., Assistant Surgeon. Detached from the Constellation, July 17th, and ordered to the Texas, July 20th.

WILSON, G. B., Passed Assistant Surgeon. Ordered to the Constellation.

Marine Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending July 10, 1897.*

MURRAY, R. D., Surgeon. Granted leave of absence for thirty days. July 10, 1897.

GASSAWAY, J. M., Surgeon. Upon being relieved by Passed Assistant Surgeon P. C. KALLOCH, to proceed to San Francisco, Cal., and assume command of service. July 9, 1897.

STONER, GEORGE W., Surgeon. To inspect quarantine station for the port of New York, N. Y. July 10, 1897.

GODFREY, JOHN, Surgeon. Upon being relieved by Surgeon J. M. GASSAWAY, to proceed to Detroit, Mich., and assume command of service. July 9, 1897.

KALLOCH, P. C., Passed Assistant Surgeon. To proceed to Cairo, Ill., and assume command of service. July 9, 1897.

CARRINGTON, P. M., Passed Assistant Surgeon. To inspect quarantine stations on coasts of Georgia, South Carolina, North Carolina, and Virginia, beginning at St. Mary's, Ga., and continuing to and including West Point, Va. July 7, 1897.

PERRY, T. B., Passed Assistant Surgeon. To proceed to Evansville, Ind., and assume temporary command of service. July 6, 1897.

YOUNG, G. B., Passed Assistant Surgeon. Granted thirty days' leave of absence from August 5, 1897. July 9, 1897.

SPRAGUE, E. K., Passed Assistant Surgeon. Granted five days' leave of absence. July 6, 1897.

DECKER, C. E., Assistant Surgeon. Granted twenty-six days' leave of absence. July 7, 1897.

PROCHAZKA, EMIL, Assistant Surgeon. Granted ten days' leave of absence. July 1, 1897. Placed on waiting orders from and including July 11, 1897. July 10, 1897.

TABB, SHERRARD R., Assistant Surgeon. To proceed to Buffalo, N. Y., for temporary duty. July 6, 1897.

Births, Marriages, and Deaths.

Married.

OLSEN—REYNOLDS.—In Lake Geneva, Wisconsin, on Wednesday, July 7th, Mr. Oliver A. Olsen and Miss Edythe A. Reynolds, daughter of Dr. James C. Reynolds.

PURTELL—RICE.—In Milwaukee, on Wednesday, July 7th, Dr. Edward J. Purtell and Miss Helen Maria Rice.

REYNAUD—WILSON.—In New Orleans, on Tuesday, July 13th, Mr. Brunner Reynaud, son of Dr. Louis F. Reynaud, and Miss Alexina Wilson.

Died.

BERNSTEIN.—In St. Maurice, Louisiana, on Friday, July 9th, Dr. Albert M. Bernstein.

HUBBARD.—In Bridgeport, Connecticut, on Sunday, July 18th, Dr. Robert Hubbard.

MCLOCHLIN.—In Saratoga, N. Y., on Friday, July 16th, Dr. James A. McLochlin, of New York, aged forty-eight years.

Letters to the Editor.

A PECULIAR CASE OF APPENDICULAR DISEASE.

WILLIAMSPORT, PA., *July 6, 1897.*

To the Editor of the New York Medical Journal:

SIR: Having recently run across a peculiar case of appendicitis, I desire to report the same through your journal.

Maud M., aged twenty-eight years, single, domestic, consulted Dr. W. P. Logue, of this city, in April, and he diagnosticated pyosalpinx with adhesions, due to an attack of gonorrhœa which the patient acknowledged having had some months before. He advised removal of the appendages.

On June 22d, assisted by Dr. Logue, I removed a large pus sac of about the size of an orange from the left side. On examination of the right side I could only make out a mass of adhesions involving omentum, uterus, bladder, and intestines in one mass.

Carefully separating the adhesions, during which I was obliged to ligate the omentum several times for hæmorrhage, I finally made out and removed a peculiar appendix. It was eight inches long, three inches and a half in circumference at its attachment to the intestine, two inches and a half at the middle portion, and an inch at the free end, which was firmly adherent to the fundus of the uterus. During its removal the sac ruptured, allowing about two ounces of pus to escape into the abdominal cavity. Section of the appendix revealed a cherry stone firmly imbedded in the lower end of the canal. The right Falloppian tube was catarrhal, the ovary was cystic, and both were firmly bound down by adhesions, necessitating great care in removal.

The abdomen was irrigated with hot salt solution, a bichloride (1 to 5,000)-glass drain was inserted, and antiseptic dressings were applied. The drain was removed in forty-eight hours. The wound had closed and the stitches were removed on the tenth day. The highest temperature was 101° F. The patient will leave for her home, out of town, to-day (the twenty-first day).

A remarkable thing about this case is that *at no time* has she complained of any pain in the right side, although the adhesions were many of them old and tough, convincing me she had had one or more attacks of inflammation.

This case makes the eighth one in which I have operated this year in which the symptoms were all of a mild character, although I found a great many old adhesions on opening the abdomen, while in many cases presenting great symptoms and great pain I have found the appendix only slightly inflamed, leading me to conclude that one should always operate when a *positive* diagnosis of appendicitis can be made, and not wait until the symptoms are so grave that it may be too late.

D. WALTER SPENCE, M. D.

THE IRRIGATION TREATMENT OF GONORRHŒA.

206 FRANKLIN STREET, BUFFALO, *July 12, 1897.*

To the Editor of the New York Medical Journal:

SIR: I notice in your issue of July 3d a new method for the rapid cure of gonorrhœa, by Dr. Julius A.

Silverman, of Butte, Montana. Of course, not using exactly the same kind of syringe, I am of the opinion that the solution he advises and in the same strength was used for the cure of gonorrhœa several decades ago. The treatment or syringe is not what I wish to call particular attention to. The doctor states: "The catheter is long enough to just reach the bladder sphincter," and further says, "after passing into the urethra the end touches the sphincter, which spasmodically closes, closing the opening into the bladder." Now, strictly speaking, the posterior urethra is the neck of the bladder if it has any. If the doctor looks at it in this light and calls the compressor muscle the sphincter which closes the canal so none of his fluid can go backward, I will agree with him, but if he calls the three or four muscular fibres around the vesical opening the sphincter, and says this will cause any obstruction to fluid introduced beyond the compressor, he is entirely mistaken. Any fluid, no matter how small the quantity, placed behind the compressor muscle will at once flow backward into the bladder, as those few fibres are not powerful enough to hold the urine within the bladder when it fills to a certain extent. If the doctor wishes to prove what I say, let him introduce a catheter as far as the compressor, expel the air, then push it half an inch farther on, and inject fluid, and he will find it takes no pressure whatever to put any amount up to eight ounces without pain into the bladder, and still his catheter is at least two inches from the vesical opening into the urethra.

J. Henry Dowd, M. D.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fourth Triennial Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. William H. Welch, of Baltimore, in the Chair.

(*Concluded from vol. lxv, page 709.*)

Congenital Dislocation of the Hip.—Dr. E. H. Bradford, of Boston, on behalf of the American Orthopædic Association, opened the discussion on this subject, and exhibited a large number of lantern views. Speaking of the diagnosis, he said that the condition was not likely to be confounded with anything else, unless it might be coxa vara, but in the latter the gait, so characteristic of congenital dislocation, was absent. In the operative treatment he favored the use of the incision recommended by Lorenz—namely, an incision extending from the anterior superior spine of the ilium obliquely downward along the outer edge of the tensor vaginæ femoris and the anterior edge of the glutæus medius. By this incision the joint was exposed and the acetabulum could be deepened to the desired extent by means of a curette. It was not necessary, he said, to free the muscles attached to the great trochanter, but in order to facilitate the reduction of the dislocation it was important to sever the attachment of the capsule to the lesser trochanter and to the spiral ridge. Lorenz had more recently devised another method of treating congenital dislocation of the hip, which he called "the bloodless method." The child was placed in a horizontal frame, and for several days previously to the operation the shortened capsular attachment was stretched by traction downward at the same time that the limb was gradually abducted. The child having then been anæsthetized, the limb was to be stretched at right angles to the body. This part of the operation could be conveniently done by means of a Thomas splint provided with a windlass attachment. The next step was to flex and abduct the limb, and while it was in this position to apply a plaster-of-Paris spica. It was stated that the child did not experience any special discomfort after the operation. The child was got out of bed as soon as possible, the trochanteric muscles were strengthened by massage, and the patient was instructed to walk with the leg slightly abducted. Dr. Bradford said he felt confident that by these means we were at last able to cure congenital dislocation of the hip in children under five years of age, or, by the incision method, even those between the ages of seven and fifteen years.

Dr. V. P. Gibney, of New York, said that he regretted that he could not share the very favorable opinion expressed by Dr. Bradford regarding the curability of congenital dislocation of the hip. He did not know of a single case in this country in which, notwithstanding the performance of Hoffa's or Lorenz's operation and the fact that the head of the femur was in place, the limp did not persist. Moreover, he had met with several examples of severe chronic suppurative arthritis of the hip.

Dr. Harry M. Sherman, of San Francisco, said that he had had the advantage of personally observing Lorenz's operations and results. Lorenz made the incision of the capsule with a sharp-pointed knife, and then he passed a knife like a large tenotome into the capsule and divided it freely. Using the finger as a guide, he curetted the acetabulum, traction on the limb being made all the while. After the reduction had been effected, a strand of iodoform gauze was carried deeply into the wound for drainage, the limb was extended and decidedly abducted, and then both lower extremities were dressed with a plaster-of-Paris bandage. The limbs were kept apart by means of a wooden crosspiece. After six weeks this apparatus was removed and the child allowed to walk around. At first, there was usually free motion, but this gradually diminished, and, if after-treatment by means of systematic exercises and massage was not carried out, flexion and abduction would develop. Occasionally, as a result of the stretching to which the sciatic nerve was subjected at the operation, there would be a paralysis of this nerve. The speaker said that he was of the opinion that with greater experience and a better technique the results from this operation would be satisfactory.

The remainder of this session of the congress was in charge of the American Surgical Association, and was taken up with a consideration of

The Classification of Acute Peritonitis; the Prognosis and Treatment of the Different Varieties.—Dr. Nicholas Senn, of Chicago, opened the discussion with a paper on The Classification of Acute Peritonitis. The following schemes of classification were presented:

I. *Anatomical Classification.*—(*a*) Ectoperitonitis; (*b*) endoperitonitis; (*c*) parietal peritonitis; (*d*) visceral peritonitis; (*e*) pelvic peritonitis; (*f*) diaphragmatic peritonitis.

II. *Ætiological Classification.*—(*a*) Traumatic peritonitis; (*b*) idiopathic peritonitis; (*c*) perforative peritonitis; (*d*) metastatic peritonitis; (*e*) puerperal peritonitis; (*f*) peritonitis infantum (including fœtal and intra-uterine peritonitis and peritonitis neonatorum).

III. *Pathological Classification.*—(*a*) Diffuse septic peritonitis; (*b*) putrid peritonitis; (*c*) hæmorrhagic peritonitis; (*d*) suppurative peritonitis; (*e*) serous peritonitis; (*f*) fibrinoplastic peritonitis.

IV. *Bacteriological Classification.*—(*a*) Streptococcus infection; (*b*) staphylococcus infection; (*c*) pneumococcus infection; (*d*) bacillus-coli-communis infection; (*e*) gonococcus infection; (*f*) tuberculous infection.

V. *Clinical Classification.*—(*a*) Ectoperitonitis; (*b*) diffuse septic peritonitis; (*c*) perforative peritonitis; (*d*) circumscribed peritonitis; (*e*) hæmatogenous peritonitis; (*f*) visceral peritonitis; (*g*) pelvic peritonitis; (*h*) puerperal peritonitis; (*i*) subdiaphragmatic peritonitis.

Ectoperitonitis, Dr. Senn said, was an inflammation of the attached side of the peritonæum, as distinguished from inflammation of its serous surface. This form of peritonitis was characterized by an intrinsic tendency to limitation, although in certain localities—*e. g.*, the cavum Retzii and the retroperitoneal space on either side of the spinal column—suppuration might be quite diffuse. Peritonitis of visceral origin was always preceded by ectoperitonitis. Where the peritonæum was simply exposed by an infected wound of the abdominal wall, the primary ectoperitonitis was sometimes followed by an extension of the process through the lymphatics to the serous surface.

Parietal peritonitis was most commonly secondary to an extension of an infection from one of the abdominal or pelvic viscera or to perforation of one of the viscera. A visceral peritonitis was one in which the peritoneal investment of any of the abdominal or pelvic organs became inflamed. As the mesentery and omentum were anatomically modified forms of the peritonæum, inflammation of these structures were spoken of as "mesenteritis" and "epiploitis."

An idiopathic peritonitis was one occurring without antecedent injury or suppurative lesion. Its very existence was doubted by some, and it certainly was rare. As all inflammations were looked upon as due to infection with some pathogenic microbe, it was probable that future bacteriological research would reveal a microbic cause for so-called idiopathic peritonitis.

Perforative peritonitis was a very common variety. Experiment had shown that when the wall of the intestine became paretic or gangrenous the contained microbes could pass through it. This would explain many deaths from septic peritonitis occurring in connection with intestinal obstruction. Metastatic peritonitis occurred almost solely in connection with pyæmia. Intra-uterine peritonitis was most apt to develop from the seventh to the ninth month of gestation. It was often associated with syphilis and usually proved fatal to the fœtus. Peritonitis neonatorum occurred very commonly in connection with cases of puerperal fever, the infection taking place through the partially healed umbilicus.

The pathological classification presented by Dr. Senn was based almost entirely on the gross and microscopical appearances of the exudation and transudation. He said that the term "diffuse septic peritonitis" should be restricted to those cases in which death usually occurred in such a short time that gross pathological lesions had not yet formed. In this variety the microbes followed the lymph spaces. Putrid peritonitis was characterized by a brownish, fœtid product, and was often observed in very severe forms of puerperal metritis. Hæmorrhagic peritonitis was characterized by brownish patches with delicate vascular villi. It was most frequently observed in the pelvis. In sero-purulent peritonitis the tendency to extension was limited by fibrinous exudations. Both serous and fibrinoplastic peritonitis were due to a very mild infection.

Under the head of "bacteriological classification," streptococcus infection was given the first place, because it was this microbe that occurred most frequently in septic peritonitis. In this variety fibrinous exudate and effusion were conspicuous by their absence. Where the infection was due to the staphylococcus there was a greater tendency to limitation of the process. The diplococcus of pneumonia was occasionally the cause of acute suppurative peritonitis. Where the wall of the intestine became permeable as a result of intestinal paresis or gangrene, the colon bacillus escaped into the peritoneal cavity and set up a suppurative or fibrinoplastic peritonitis. In the peritoneal cavity the gonococcus produced a plastic peritonitis. In cases of tuberculous infection of the peritonæum there resulted, according to the intensity of the infection: (1) tuberculous ascites; (2) fibrinoplastic peritonitis; or (3) adhesive peritonitis. Suppuration did not occur unless there was a mixed infection.

Considering ectoperitonitis from the clinical standpoint, Dr. Senn said that it was not infrequently followed by extension of the infection through the lymphatics to the free surface, thus exposing the patient to the risk of perforation of an abscess and to septic diffuse peritonitis. At the bedside the onset of perforative peritonitis was usually announced by the sudden development of diffuse pain and tenderness, with rigidity of the abdominal wall associated with fever and vomiting. An almost positive proof of the presence of gas free in the peritoneal cavity was the impossibility of detecting intestinal peristalsis by inspection, palpation, and auscultation. Circumscribed peritonitis might arise from a variety of conditions—*e. g.*, appendicular inflammation, perforating ulcer of the stomach, inflammation about the gall bladder, and inflammation of the uterine appendages. Hæmatogenous peritonitis had been observed in connection with nephritis, pyæmia, rheumatic arthritis, and the acute exanthemata.

The Prognosis of the Different Varieties of Peritonitis.—Dr. Robert Abbe, of New York, considered this part of the subject. He said that it was an interesting fact, one that had been demonstrated both experimentally and clinically, that the peritonæum was capable of absorbing from three to ten times the weight of the body in an hour. The extent of the inflammatory process in the peritonæum depended somewhat upon the region involved. Thus, inflammation of the peritonæum in the vicinity of the stomach, gall bladder, or uterine appendages was much less apt to be diffuse than when it originated in the middle portion of the abdominal cavity. This had been well shown by Dr. R. F. Weir's statistics regarding operative cases of perforating ulcer of the stomach. He found that there were twenty-two recoveries out of ninety-seven cases. In recent times an equally good showing could be made in gunshot injuries of the abdomen, provided the operation was done early. If it was done within twelve hours, about fifty per cent. would recover; if it was delayed for about twenty-four hours, only about twenty-five per cent. would recover. Owing to the great advances made in abdominal surgery, the statistics of the different varieties of peritonitis had improved. This was well exemplified in the fact that recent statistics showed twenty-six per cent. of recoveries after peritonitis due to perforation by a typhoid ulcer. In this connection, the speaker made a plea for greater promptness in referring cases of inflammation of the vermiform appendix to the operating surgeon.

Dr. Andrew J. McCosh, of New York, continued the discussion. He said that Dr. Senn's classification was scientific, but unnecessarily elaborate for the purposes of the clinician. The bacteriological classification was the most satisfactory one, because the most direct and definite. In estimating the prognosis in peritonitis he was disposed to consider well, not only the duration of the process, but the patient's individual powers of resistance and particularly the age. None of the patients with peritonitis that he had seen recover had been over thirty-five years old.

In considering the treatment by operation, he saw no advantage in dividing the cases into those requiring irrigation and those in which sponging of the peritonæum would suffice. As it was impossible to state from the gross appearances whether or not the inflammation was of a mild grade, it seemed prudent to treat all cases as if they were grave—in other words, to irrigate invariably. Another reason for this was that swabbing the peritonæum must necessarily injure its endothelium, and so render it more likely to absorb infectious matter. Such a treatment certainly favored the migration of the colon bacilli through the wall of the intestine into the peritoneal cavity. For these reasons, Dr. McCosh said he had made it a practice in recent years to draw out the coils of intestine into *hot* towels, and to cleanse them by pouring over them large quantities of hot sterilized saline solution. At the same time the peritoneal cavity was irrigated, by means of a hose, with hot saline solution. The water should have a temperature between 110° and 115° F.; this was not high enough to injure the peritonæum, and it did act as an excellent cardiac stimulant. It was also very important to leave a considerable quantity of this solution in the peritoneal cavity, for this not only stimulated the circulation, but favored the flow of septic material toward the intestine, instead of from the bowel into the peritoneal cavity. He viewed with horror the tendency in certain quarters to return to the opium treatment of peritonitis. His own experience had taught him that the safety of the patient depended almost entirely on our ability to prevent intestinal paralysis and promote intestinal peristalsis. So strongly did he feel on this point that he not only gave ten grains of calomel after the operation, but was accustomed to inject sulphate of magnesium high up into the small intestine. For this purpose he used a medium-sized aspirating needle and an antitoxine syringe, and injected a saturated solution of sulphate of magnesium. He felt certain that he had saved life by this procedure. He had operated in eight cases of diffuse septic peritonitis, and there had been six recoveries. In all but one of these cases the peritonitis had lasted for more than twenty-four hours, and most of them showed an advanced stage of septic inflammation. For drainage he was accustomed to use several strips of gauze, or sometimes strips of rubber tissue or pure silk. The latter had the advantage of being easily removed. He would sum up the treatment of general septic peritonitis by saying that success depended chiefly on an early operation, thorough irrigation, efficient drainage, and the establishment of free intestinal peristalsis.

Dr. George R. Fowler, of Brooklyn, continued the discussion. He said that the least dangerous mode of entrance for the infecting organisms was in connection with a wound of the abdominal wall. In making the prognosis, one should take into consideration the source and virulence of the infection, its mode of entrance, the concomitant circumstances, the presence of hæmorrhage or serous exudation, and the amount of limitation of the inflammatory process. In the matter of treatment, our present bacteriological knowledge made it difficult to conceive of a case in which we were justified in assuming that the patient's doom was sealed from the very beginning, and, this being the case, the surgeon must not shift the responsibility placed upon him. Judging from his own observations in one case, and from the reports of other cases in which the streptococcus serum had been administered in cases of diffuse septic peritonitis, this new remedy did not appear to have any marked influence over the peritonitis—at any rate, its value must be considered as still *sub judice.*

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPÆDIC SURGERY.

Meeting of May 21, 1897.

Dr. A. B. Judson in the Chair.

Dislocation of the Peroneus Longus and Peroneus Brevis.—Dr. W. R. Townsend presented a young man, twenty years of age, whose peroneal tendons were easily dislocated to the front of the malleolus. The right foot had been affected in this way for many years, the left only for the past seven months. On his walking and on his rising from a chair, the tendons would slip over the malleolus and cause considerable disability till they were replaced by the hand. The boy did not have much pain, but he was easily fatigued. Dr. Townsend had hastily reviewed the literature of the subject. Dr. L. A. Sayre had reported a case in 1870. In 1876 Dr. Beach, of Boston, had reported eighteen cases, including one of his own. Gillet de Grandcourt had reported ten cases in 1878. Treves said it was caused by sudden and violent contraction of the muscles when the limb was in such a position as to favor displacement, that it might be treated by pads and pressure, and that in some cases it was advisable to replace the tendons and retain them by suturing the torn edges of the sheath.

Dr. R. Whitman suggested deepening the channel, replacing the tendons in the groove in the bone, and giving them a new covering of periosteum or fibrous tissue. This might be possible without removing the sheath.

The Chairman said that the peronei were comparatively small and unimportant muscles. To a slight degree they assisted the muscles of the calf to extend the foot on the leg. Aside from this their function was to evert the sole of the foot, and this function was not seriously impaired by displacement of the tendons to the front of the malleolus. He thought that the patient would get no benefit from an operation, and that practically no treatment was needed.

Dr. Whitman said that the discomfort caused by the slipping of the tendons must be considerable, and that the boy would be better off if this could be stopped.

Dr. Townsend said that the patient had recognized the disability and had come on account of it, and he did not think it was fair to tell him that we could do nothing for him without trying. He thought an attempt should be made to prevent the slipping of the tendons by the application of pads and pressure before an operation was decided on.

A Case of Traumatic Spine with Rectal and Vesical Paralysis.—Dr. J. P. Fiske presented a patient, a man thirty-three years of age, who had been under treatment for fourteen months, and under observation thirty-four months, from the time of the injury. When first seen he was in a condition of complete helplessness. He could not move in bed, and if turned or moved by his attendants he suffered the greatest pain. Urine was constantly flowing, and he was not conscious of the passage of fæces. Recovery had been complete with control of the sphincters. He was now walking without assistance and had returned to his work. The accident had been attended with great violence. While he was working as a harness-maker, the boards gave way under him, as he was carrying a heavy load, and his right leg went through a hole in the floor. The spine was forcibly flexed and he became unconscious. On the twentieth day after the injury rigidity of the spine and muscular spasm were marked. There were complete paralysis from the waist down as regarded voluntary motion, incontinence of urine and fæces, and pain in the dorso-lumbar region, aggravated by the slightest motion. Crepitus and spinal deformity were absent. The diagnosis was that of severe traumatism of the spine, concussion of the cord, more or less complete rupture of the ligaments, and possibly partial dislocation of one of the lumbar vertebræ with spontaneous reduction. He was at once incased in plaster of Paris from the axillæ down to and including the pelvis, with considerable immediate relief. The plaster jacket was renewed when necessary and was worn day and night for ten months. This treatment, with massage, frequent change of position, alcohol baths, and such medication as was required by his poor general condition and the vesical symptoms, was attended by gradual recovery. There were no bedsores. At the end of four months he sat up in bed and was lifted into a steamer chair. In seven months he had regained control of his rectum and could walk a short distance with crutches. From this time his recovery was more rapid. The incontinence of urine persisted longer than the other symptoms, but ceased after a time, and for the past twelve months he had been a perfectly well man. This case showed clearly the immediate and permanent relief which followed absolute fixation after severe spinal injury. Patients treated without persistent fixation were liable to be constantly troubled with pain in the back and legs and to present the symptoms of railway spine. Dr. Fiske added that these cases were often considered hopeless. He had presented the patient as an example of what continued fixation and supporting treatment would accomplish.

An Ischiadic Crutch used in Place of an Artificial Limb.—The Chairman presented a boy, nine years of age, who was wearing an ischiadic crutch instead of axillary crutches or an artificial limb. Amputation had been performed below the knee after a railroad accident. The case illustrated the comfort and ability which this apparatus was able to secure in the treatment of those affections of the lower extremity which required that the weight of the body be removed from the affected limb. This use of the skeleton of the pelvis was not a new thing. Ischiadic support was a feature of Dr. Fayette Taylor's hip splint described in 1867. In fact, the long hip splint was an ischiadic crutch with the added function of traction. In the instrument shown, the crutch consisted of an upright steel piece adjustable in length, to meet the growth of the patient, with an India rubber crutch tip at the foot and a semicircular pelvic band carrying a single perineal strap. It also had a shoulder strap which transferred the weight of the splint to the opposite shoulder, a steel knee piece restraining the limb antero-posteriorly, and a webbing strap above the knee. There was no customary leather strap surrounding the splint and the ankle, because the lower part of the leg was absent. Although the stump was flexed in walking, there was no possibility of ankylosis interfering with the subsequent use of an artificial leg, because the knee was free from inflammation, which necessarily preceded ankylosis. The apparatus was easily provided with a joint at the level of the knee, and this was desirable in convalescent hip disease, if the limb was so long as to be inconvenient if constantly extended.

Osteotomy for Inversion in Clubfoot.—Dr. Townsend, at the request of Dr. V. P. Gibney, presented a girl, five years of age, whose feet had been treated by Phelps's operation, by braces, and by building up the outer side of her shoes. On February 16, 1897, to correct inversion, subcutaneous osteotomy of both tibiæ had been performed, and also division of the right tendo Achillis. The lower fragments of the tibiæ were rotated outward and the limbs put in plaster of Paris. The inversion had been entirely corrected. Mr. R. L. Swan, of Dublin, who had described this operation, after an experience in the treatment of twenty patients with good results, had said that rotation of the limb as the result of equino varus which persisted after the latter was corrected, was due to trouble below the knee, and that when these patients walked and attempted to toe out, they threw the entire limb out by rotation of the thigh, and the gait was awkward. The toeing-in was due to the fact that the entire leg was rotated in and the external malleolus was too far forward. To overcome this, he divided the tibiæ only, rotating and bringing outward the lower fragment, thus placing the internal malleolus farther forward as regarded its rotation with the external malleolus.

The Chairman said that, for the prevention of inversion, he relied on the thorough correction of the equino varus. If this was done, the child would avoid toeing in, either unconsciously or, later, from pride.

Dr. Whitman said that division of the bones of the leg was a very old operation for the correction of the intoeing of clubfoot.

Dr. Townsend said that Mr. Swan divided only the tibia, and was very careful not to divide the fibula.

Dr. Taylor had noticed that the feet in the case shown had not been fully corrected before the operation. The child walked very well now and the result was very good, but it did not seem certain that this condition would prove permanent. He believed that the persistence of inversion in many of these patients was due to incomplete correction of the deformity.

Calcaneo-valgus with Subluxation of the Astragalus.—Dr. Taylor presented a baby affected with congenital calcaneo-valgus, with a very unusual degree of dislocation, or subluxation forward, of the astragalus. The heel was unduly prominent. The astragalus was displaced forward while the fibula was behind its normal position. Treatment had been by gradual reduction and plaster-of-Paris fixation.

Coxa Vara.—Dr. Whitman presented a boy, sixteen years of age, affected with bending of the neck of the femur of about twelve months' duration. He walked with a limp and eversion of the foot. The elevation and prominence of the trochanter were increased by flexion. Limitation of abduction, actual shortening of half an inch, and marked apparent shortening from habitual adduction were all present. The treatment would be by removing the weight of the body from the weak femur by the use of a perineal crutch, massage, forcible stretching of the adductors, and, if necessary, subtrochanteric osteotomy. Bending of the neck of the femur was not due to general rickets or the rickets of adolescence, of which there were cases on record. There was, however, a weakness of adolescence which, under favorable conditions, caused this and similar deformities.

Miscellany.

The Treatment of Children's Diarrhœas.—In the May 29th issue of this journal there is an abstract of an article by Mr. Langford Symes entitled Clinical Pictures of Children's Diseases, which appeared in the June number of the *Dublin Journal of Medical Science*, and, in the July number of that journal, in a continuation of the same article, Mr. Symes says, concerning the general management of the disease, that the child should be kept warm with the legs and arms wrapped in cotton wool and hot bottles around the body. A wool jacket and a flannel binder should be worn. This heat is of the first importance; all heat must be preserved, especially in diarrhœa. Cleanliness is also important; clean, dry napkins must be constantly applied; the bed must be level and smooth, and fresh linen put on whenever it is required. All the rest possible must be procured; eruptions, irritations, and excoriations must be relieved by the use of suitable powders, such as oxide and carbonate of zinc, with a little boric acid or a weak carbolated solution of subacetate of lead. The mouth should be carefully attended to; daily cleansing will be necessary to remove fungi or thrush if it is present. Glycerine of borax, diluted peroxide of hydrogen (a two-per-cent. solution), and salol in glycerin are excellent applications.

Regarding the removal of irritating particles of food, Mr. Symes advises giving a purgative to stop purging. The best drug, he says, is castor oil. It affects the stomach and upper portions of the small intestines. There are two ways of giving it. A full dose acts directly as a thorough purge, and clears the bowel; a drachm is quite sufficient for a child a year old, and half a drachm for a younger infant. The earlier this is given the better. In chronic attacks from ten to fifteen minims given daily, in the mornings, is best for some, if continued for a long time. The second method is to give five minims every hour. This is very soothing for small children. An extremely useful prescription is:

℞	Castor oil	5 minims;
	Mucilage of acacia	15 "
	Peppermint water, enough to make a drachm.	

M. S.: To be given every hour.

If thought advisable, one minim of the British official solution of corrosive sublimate in each drachm of the castor oil mixture does great good. Olive oil is suitable for very young infants; fluid magnesia, licorice powder, tamar indien, or elixir of senna, for older children. The syrup of rhubarb also acts well. Another useful mixture is:

℞	Powdered rhubarb	1 grain;
	Sodium bicarbonate	½ "
	Syrup of ginger	8 minims;
	Peppermint water, enough to make a drachm.	

M.

The administration of a purge in the collapsed states of severe infective summer diarrhœa is an extremely serious matter. The question can be decided only by a thorough grasp and appreciation of the case in point.

Much care is necessary with the food, and Mr. Symes thinks that pure fresh milk is undoubtedly best unboiled, if the source is known to be pure, but in cities it is safest to boil it before use. Concerning the milk diet, the author recommends the following: 1. Diluted milk. This in equal parts or a third of pure water breaks up the curd. Barley-water makes the curd less firm. Soda-water is excellent if the child will take it. Limewater is often used, but a few drops of the saccharated solution are best if lime is required medicinally. Plain boiled water is a good diluent, or an ounce each of milk, limewater, and boiled water. 2. Humanized milk. This contains less curd and more cream. The only scientific way of feeding infants artificially is by regulating the percentage of proteids, fats, and sugar. The proteids should be kept at about one per cent. 3. Peptonized milk. 4. Condensed milk if good. 5. Sterilized milk. This is free from poisonous germs. 6. Pasteurized milk. Regarding the elimination of starch from the food, says Mr. Symes, bread-jelly, barley-water, rice-water, and Mellin's food seem to be the least disastrous of starchy foods, although they are often inadmissible. The use of milk should be stopped altogether in severe cases.

There are many *substitutes for milk*. Raw meat juice is excellent for children; it is a good antiscorbutic. The scrapings of a rump steak against the grain may be used, or it may be shredded, pounded, and strained through muslin; of this a drachm may be given every four or six hours, sweetened.

White of egg diluted, or "albumin water," is the white of an egg cut in various directions with clean scissors, shaken up in a flask, with a pinch of salt and six ounces of pure cold water, strained through muslin, and sweetened. This may be given alone or with mixed milk. Valentine's meat juice, Brand's jelly, veal or chicken tea, white-wine whey, plenty of pure fresh water, beef essence, beef pulp, clear soup, chicken jelly, the yolk of an egg beaten into an emulsion, with hot water, strained and sweetened, and raw-meat jelly are also good substitutes.

Antiseptics, continues the author, should be employed to allay fermentation, and the most useful of these are the following: *Calomel.* This should be given at once, with or after an initial dose of castor oil, frequently in fractions of a grain. *Resorcin.* From half a grain to five grains will be active in the stomach and upper intestinal tract. It is not irritating, and is soluble and sweet. It may be given with glycerin and cinnamon water and a carefully regulated dose of tincture of opium, or with bismuth carbonate and Dover's powder. The use of resorcin should be continued after the diarrhœa has disappeared. *Bismuth salicylate.* From one to three grains every hour. *Benzol naphthol.* Dr. Fenwick uses as much as thirty grains a day. It is not poisonous. *Sodium salicylate.* From two to four grains every four hours will relieve gastric fermentation. *Glycerine of* *carbolic acid.* From one to four minims; this may be usefully combined with castor oil. *Naphthalene.* From one to three grains. *Glycerine of borax.* Thirty minims. Other drugs, such as thymol, listerine, salol, and lactic acid are also useful.

Intestinal irrigation, says Mr. Symes, is well worth trying, and it must be a high irrigation of the bowel with a soft-rubber catheter from a glass douche-can. First wash out the rectum, and then irrigate with a normal saline solution or boric-acid lotion used warm. Slight elevation of the douche-can is sufficient—eighteen inches. It is carried out in bed, and an India-rubber bed-pan is a great help. A small enema is of no use. Rectal irrigation is one thing, but intestinal irrigation is quite another.

Washing out the stomach is vigorously recommended by Dr. Vaughan with sixty grains of sodium bicarbonate in a pint of water at 100° F. Resorcin and boric-acid solutions have also been suggested by Continental writers.

One of the best sedatives to allay excessive or abnormal peristalsis is opium. When carefully given it does no harm. A child three months old might be given a quarter of a minim of tincture of opium for a dose. A most excellent form is:

℞ Paregoric, Glycerine of carbolic acid,	each 1 minim;
Castor oil......................	5 minims;
Mucilage of acacia.............	15 "
Peppermint water, enough to make a drachm.	

For a child a year old the dose of paregoric may be from five to ten drops, or of Dover's powder, half a grain.

Chlorodyne may also be given if its action is carefully watched. The greatest care must be taken in the prescription of opium, for it is dangerous though useful.

In older children a very useful powder is—

℞ Bismuth carbonate, Sodium bicarbonate,	each........ 3 grains;
Dover's powder..................	1 grain.

M. S.: Two such powders to be taken in a day.

In case of collapse, the author continues, fresh pure water to drink is strongly indicated. Water is essential to life, and if it can not be given by the mouth, it may be injected warm into the rectum. The loss of water is extreme, and in the dry condition of the tissues we respond to Nature's call if it is administered. Stimulants also may be given, such as brandy or strong coffee; camphor, from a quarter of a grain to two grains, may be suspended in mucilage with glycerin. A one-per-cent. sterilized saline solution may also be given hypodermically, ten cubic centimetres at a time with a Roux syringe.

The Value of an Exclusive Red-meat Diet in Certain Cases of Chronic Gout.—This method of treatment was alluded to in the issue of the *Journal* for June 5th, which contains an abstract of a report of a recent meeting of the Medical Society of London, published in the *Lancet* for May 15th, at which this subject was brought up for discussion regarding the line of treatment recommended by Mr. Armstrong. In the *Lancet* for July 3d Mr. Armstrong describes the course of this method of treatment, which lasts from four to twelve weeks in its strict form, as follows—subject to such modifications as the condition of the patients and their progress demand: "The bowels having been thoroughly relieved the patient begins to drink from three to five pints of hot water daily; the temperature of this should be from 100° to 120° F.; a little lemon juice may be added, and it should be drunk in sips. One pint should be taken at least one hour before each meal, and the same quantity at bedtime. The food should consist at first of beefsteak from which all fat, gristle, and connective tissue have been removed; this should be thoroughly minced, a little water being added, and then warmed through with gentle heat until it becomes brown in color and perfectly soft and smooth; it can be eaten thus or else made up into cakes and cooked on the grill. On the minced meat may be put the poached whites of from two to four eggs a day. The only bread allowed is a half slice, cut very thin, and thoroughly torrified in the oven, with each meal. A little salt or pepper may be added to the meat, or a little mustard freshly mixed with lemon juice. As the treatment progresses a little of the steak may be given grilled, or a lean mutton chop; very little or no fluid should be given with the food. The quantity of the meat given is from one pound to four pounds in the twenty-four hours. During the latter part of the treatment a grilled cod steak is often ordered. Alcohol should be avoided; if absolutely necessary, a little good whisky with cold water may be given with food; or a cup of weak tea with a slice of lemon, or a cup of black coffee may be taken. The immediate results experienced are a feeling of hunger and a difficulty in drinking so much hot water; these difficulties soon disappear, although the feeling of "emptiness" due to the stoppage of the carbohydrates often persists. There is also a marked diminution of the abdominal girth and a more or less rapid loss of flesh, especially in those who are fat and flabby; but walking is much easier and the breathing is often greatly relieved. The urine at first is often scanty and loaded with urates, which indicates either the necessity for adding some freshly prepared citrate of potassium to the hot water given in the early morning and late evening, or else an increase in the quantity of water drank. The bowels become constipated, the motions being scanty and dark-colored. An aperient is often necessary. After the first two or three weeks the patient begins to feel weak and easily tired, and it is wise at this stage to limit the amount of exercise taken, substituting in some cases a little massage; but before the conclusion of the course the strength returns, and stout patients especially feel the benefit of the diminished weight."

The changes due to the treatment, continues the author, are very marked. The swelling of the joints diminishes, the aching and soreness are greatly relieved, and the mobility is considerably increased. The patient becomes brighter, and work, both mental and bodily, is done with pleasure instead of with trouble and effort; acidity, pyrosis, heaviness, distention, and oppressed feelings after food disappear; flatus is greatly diminished in quantity and becomes much less offensive, and the perspiration loses the disagreeable odor so frequently present in these cases. The urine becomes more copious and clearer, and does not give the reactions to nitric acid and ferric chloride, and the oxalates and uric acid are materially decreased. Mr. Armstrong thinks that the indications for the adoption of this treatment are: 1. Obstinate and refractory chronic gouty arthritis. 2. Recurrent uric-acid calculi. 3. Frequent and intractable migraine. 4. Obstinate gouty dyspepsia. The treatment appears to be indicated more especially if any of the following symptoms are present: 1. Amylaceous and intestinal dyspepsia. 2. Acidity, pyrosis, and flatulence. 3. Heaviness and irritability after food. 4. Excessive formation of sulphureted hydrogen in the large intestine, disagreeable smelling perspiration, and offensive breath. 5. The following conditions of the urine: *a*, persistent lithiasis; *b*, oxaluria; *c*, excessive formation of indican; *d*, purple or red reaction with nitric acid; *e*, wine-red reaction with ferric chloride.

Dr. Armstrong feels sure that where either damaged kidneys or a weakened heart are present exceptional care should be taken. In fact, he says, many of these cases are quite unfit for the treatment, although he states that he has seen several cases in which both unsound kidneys and heart have been greatly relieved, but such patients require daily watching and the exhibition of great care, experience, and discretion.

The author's experience of the so-called "Salisbury" dietary has led him to form the following conclusions: 1. That a certain number of cases of chronic gouty arthritis, recurrent uric-acid calculi, and gouty dyspepsia, with fermentative changes, which have proved refractory to ordinary methods of treatment and dietary, may be treated by means of an exclusively red-meat dietary, *plus* hot water drinking, with excellent results. 2. That this method of treatment is irksome and trying, and as, unless it is carried out strictly in the first instance, it is apt to do harm, it should only be used in those cases where other methods have failed or are thought likely to do so. 3. That the cases require careful selection and close medical supervision, the details being modified according to the needs of each individual patient. 4. That those who suffer from persistent albuminuria or organic heart disease are in most instances unfit for this treatment; when, however, it is prescribed for them its course should be watched daily. 5. That in certain cases of chronic gouty arthritis in which the patients fail to improve while on a mixed diet they recover equally well whether on this dietary or on the meat-free dietary suggested by Dr. Alexander Haig. 6. That it is of the utmost importance that no addition, however small, of carbohydrates, saccharine matters, or fruit should be made to the dietary during the first few weeks of treatment, very slight acts of carelessness in this respect having often caused disappointment and failure. 7. That used with due care and discretion this method is a most efficient, and sometimes even a brilliant, addition to our therapeutic resources, but that it is only necessary in some three or four per cent. of gouty cases treated.

The Treatment of Hip-joint Disease.—At a recent meeting of the Société de chirurgie, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for July 1st, M. Gérard-Marchant stated that he had had occasion to straighten out the tuberculous knee of a little girl. After the operation there had been fever for about three weeks, and at the end of this time all the symptoms of meningitis had supervened and the patient had died six weeks after the operation. In this case, he said, it seemed impossible not to attribute the meningitis to the sudden straightening out of the knee, and he thought it could not be a question only of a simple coincidence; nevertheless, there had existed at the moment of operation only a slight tumefaction of the femoral condyle.

M. Berger said that he had employed in the abscesses of coxalgia injections of iodoform and ether and of camphorated naphthol with satisfactory results. According to him, there were two forms of abscess: That which was observed during the end of the disease, after the removal of the dressings, which was easily cured by injections; and that which was observed when the disease was at its height; here injections were of no avail. In this case the abscess must be opened and curetted as completely as possible. During this procedure, after each application of the curette, the latter must be cleansed in order to avoid secondary inoculation. Curettage, said M. Berger, as complete as possible, always gave bad results, although in some cases it amounted to a veritable resection. The general treatment of hip-joint disease was, moreover, variable according to the case.

M. Jalaguier was opposed to resection, except in rebellious cases of hip-joint disease with fistulæ, in which he had made atypical resections. Complete curettage of the hip seemed to him to be difficult of application. Moderated injections, he thought, put the patients in a good condition and enabled them to bear atypical resections. In other cases he had employed continued extension, and after a certain length of time he had applied a plaster apparatus which had enabled the child to walk. If the position was defective, he resorted to sudden straightening out under the influence of chloroform; if there was no abscess, he applied a plaster apparatus. He thought no accidents could result from sudden straightening out.

M. Kirmisson thought that the profession in general preferred conservative methods in the treatment of hip-joint disease; that resection and complete curettage had been rejected, except in some special cases. Almost all surgeons, he said, gave preference to continued extension. He thought that immobilization put the joint in a good condition for recovery; that an apparatus was simpler and enabled the patient to walk. But it was absolutely necessary to place the leg in a moderated posture of abduction. On this position depended the good result.

Concerning forced straightening out, M. Kirmisson thought that it might provoke meningitis at the end of three or four weeks.

The Treatment of Sympathetic Ophthalmia with the Extract of the Ciliary Body of the Ox.—In the *Gazette hebdomadaire de médecine et de chirurgie* for June 24th, M. Louis Dor, of Lyons, relates the following case: The patient presented symptoms of sympathetic ophthalmia in February, 1896. The right eye was enucleated, and the left eye was treated for a year with injections of corrosive sublimate, mercurial frictions, iridectomy, etc. In spite of this treatment, the patient became almost blind, he could no longer go out alone, and the eye was soft, red, and painful. Since February he has been treated exclusively with the ciliary extract, and the eye has become hard, the media are transparent, and the visual acuity is, at the present time, $\frac{1}{50}$—that is, the patient can see letters five centimetres in length at a distance of seventy centimetres; and he is able to go out alone.

Unfortunately, says M. Dor, he is obliged to continue the treatment, for, if he allows a day to pass without instillation of the extract, a mist forms again before his eyes. If there is enough of the liquid, one drop every two hours gives the best results. The patient used during that time all the extract that could be obtained from one ciliary body.

Another patient, who had had the left eye enucleated seventeen years before, and iridectomy performed on the right eye for sympathetic symptoms, was treated by this method, and amelioration was very rapid, for in fifteen days the visual acuity increased from 0.1 to 0.6, which figure would probably not be exceeded, as the patient had very pronounced astigmatism.

Relapsing Solar Erythema.—The *Province médicale* for June 19th publishes a report of a recent meeting of the Lyons Société nationale de médecine at which M. Dreyfus presented the following case: The patient, who had a pulmonary affection, suffered from a relapsing solar erythema on the backs of her hands. For six consecutive years this disease had appeared at the same time on which it had first made its appearance, and it occurred on the backs of the hands, the face, shaded by the hat, having escaped. The lesion had been more pronounced during the preceding years and had attacked the forearm, leaving, however, the part covered by a bracelet free.

The patient was an alcoholic; the liver was enlarged and presented tumor. In this case, M. Dreyfus said, pellagra might have been suspected but for the fact that, in spite of the tuberculosis, the patient was not cachectic.

Intravenous Saline Injections in Dysentery.—In an article by M. Bosc and M. Vedel, published in the *Presse médicale* for June 23d, the authors state that the results which they have obtained with intravenous saline injections in cholera have encouraged them to try the same treatment in dysentery, which they consider a similar disease. A detailed study also of the effects of the intravenous saline injections in the experimental treatment of infections with the *Bacillus coli communis* enabled them to undertake the treatment in this direction with perfect confidence. Indeed, it seems to them an almost established fact at the present time that the dysentery of France is a colon bacillus infection. By these experimental studies the authors were enabled to recognize the progress of the infection, the effects of the injections on the symptoms, the evolution of the latter, the indications, and the best conditions to adopt concerning the mode of operation. They have seen, in fact, that in the colon bacillus infection the indications and the mode of operation should be modified and regulated in a particular manner if it is desired to obtain therapeutical results without causing accidents.

The authors employed this mode of treatment in four cases of dysentery in which the prognosis was very grave, with the result that three of the patients recovered and the fourth died; the latter case, however, is not to be taken into consideration in the general results of the treatment, as the injections were not practised until the patient was almost at the point of death. The authors here give a detailed account of the method of treatment and its effects in these four cases.

Concerning the pathological physiology of these injections, the authors state that they dilute the blood, which has a tendency to become thick; that they act energetically on the emunctories, particularly on the kidneys by direct action on the renal epithelium, and by raising the lowered blood pressure. Aside from these effects, the injections produce a general perturbation of the organism, which may reach a very great intensity and is certainly a really curative reaction. By its evolution it reproduces a critical attack, in which, according to Charrin, there is an increase of urea and of salts. Salt water, according to the authors, should determine in the organism changes which are not as yet well known, although they are beginning to be recognized. In dysentery particularly, as in all colon bacillus infections, salt water causes very energetic symptoms of intestinal vasodilatation, which favor the progress of the local lesions. Saline injections produce a reflex vaso-constriction, and, moreover, they seem to possess an action which approaches that of immunizing substances.

Whatever may be the mode of action of these injections, the authors deduce the following conclusions from their studies: 1. Large intravenous injections of a 7-in-1,000 saline solution constitute an energetic treatment in grave dysentery. 2. These injections should be administered at a comparatively early stage of the disease, and should be repeated, in order to lead to the development of a sustained general reaction and a modification of the local condition. 3. There are no contraindications to the employment of these injections in dysentery, but caution should be exercised concerning the quantity of the liquid, and especially the rapidity with which they are administered, as too large an injection is dangerous in these cases. The authors employed each time a quantity of liquid varying from 1,000 to 1,800 cubic centimetres, and from 50 to 100 cubic centimetres were injected in a minute.

A Grave Case of Dermatitis Following Two Applications of the X Rays.—At a recent meeting of the Académie des sciences of Paris M. d'Arsonval related the following case which had come under Dr. Apostoli's observation: The patient presented a very large sphacelus on the abdominal wall, which had appeared after two applications of the X rays in May, 1896. During the first application, which had lasted forty minutes, the Crookes's tube had been held at a distance of fifteen centimetres from the skin, and at the second, which had lasted an hour and a half, the tube had been brought to within nine centimetres of the skin. The immediate result had been nausea without vomiting after each application; the remote results had been as follows: Two days after the last application a progressive erythema, which had become aggravated; vesicles and blisters with a profuse serous discharge; the progressive formation of an eschar; a notable amelioration in July; and, in August, a relapse with gangrene and an intense burning sensation and pain near the gangrenous surface. Successive local applications of various kinds, even skin grafting and *raclage* practised under anæsthesia, had failed to give favorable results; finally, at the end of October daily applications of a current of oxygen on the wound for five hours had been employed, and this treatment only seemed to have had a beneficial action and to have arrested the increasing enlargement of the ulcer, without, however, having reduced it perceptibly. On February 9, 1897, electrical treatment had been begun; daily static baths had been administered, the sittings lasting from twenty to thirty minutes. At the end of March the static baths had been associated with currents of high frequency in the form of the *lit condensateur*. Since April hydro-electric baths had been combined with the undulatory current twice a week. From the beginning of this electrical treatment amelioration had been progressive, particularly after the association of the static "effluvation" with polar applications of the undulatory current. The eschar, which was dry and adherent, had become detached very slowly but progressively, and more than half of the sphacelous region had been brought to a healthy state. At the time of the report the patient was on the road to entire recovery, and the treatment was being continued.

Dr. Apostoli's conclusions are summarized as follows:

1. The application of X rays may give rise, under certain circumstances, to a more or less grave dermatitis characterized either by a simple erythema or by a more or less deep eschar which may involve the skin as far as the subcutaneous cellular tissue. 2. This dermatitis, which varies according to the region attacked, varies also, to a certain degree, according to the constitutional condition of the subject; it is comparable in many respects to an ordinary electric burn, and presents, like the latter, the same general characteristics of asepsis, apyrexia, a very slow progress toward repair, and an intensity which is about uniform in its entire extent. 3. This dermatitis is always the result of a faulty method of operation, caused either, and above all, by the too near approach of the tube, by the prolonged duration of a single application, or by too many applications following each other at too short an interval.

Dr. Apostoli proposes, as an efficacious treatment for this rebellious dermatitis, the electrical current, which should include the following methods, which may be associated in varying intensity and duration according to clinical indications: 1. Simple static "effluvation," which, by its direct and local action, aided by its general influence, hastens the repair and cicatrization of the ulcers. 2. The polar application of a galvanic current or, better still, of an undulatory current, in order to accelerate the fall of the eschar and in this way favor the ulterior topical and trophic action of the static stream. 3. The general action of a current of high frequency by the *lit condensateur* is intended, as M. d'Arsonval has demonstrated, to restore the coefficient of general nutrition, and to produce in the economy supplementary strength and vitality.

The British Medical Association.—The sixty-fifth annual meeting will be held in Montreal on Tuesday, Wednesday, Thursday, and Friday, August 31st and September 1st, 2d, and 3d, under the presidency of Dr. Henry Barnes, of Carlisle. The preliminary programme includes the following addresses: An Address in Medicine, by Dr. William Osler, of Baltimore; an Address in Surgery, by Dr. William Mitchell Banks, of Liverpool; and an Address in Public Medicine, by Dr. Hermann M. Biggs, of New York. During the meeting there will be several afternoon excursions in the neighborhood of Montreal, given to the guests by the Montreal Branch of the association. Fuller particulars as to excursions will be afforded at a later date. Guests of the association may be invited by the presidents and officers of the various sections to contribute papers and to take part in the discussions at the section meetings.

In Canada the guests will have the same privileges granted to them by the Grand Trunk and Canadian Pacific Railways as are accorded to the members of the association, namely, they will be able to travel to nearly all parts of the Dominion, from Halifax on the one hand, to Victoria, B. C., on the other, at half rates for the single journey, and single rates for the return journey. For the convenience of those attending, a suite of rooms will be placed at the disposal of the guests, for the distribution of tickets, etc.

In the neighborhood of the McGill College grounds there are very numerous lodging and boarding houses. The complete returns of these are not as yet in the hands of the local committee, but it is stated in general that comfortable rooms can be obtained at the rate of one dollar and less *per diem*, and that the prices for meals are proportionately reasonable. Those occupying lodgings which do not supply meals will be able to obtain good meals not only in the rooms which are being put up for this purpose by the local committee, but also at the numerous *cafés* situated on St. Catherine Street, within five minutes of McGill College grounds. At the *cafés* in Canada the system of tipping waiters does not obtain.

Those desiring lodgings are requested to communicate with Dr. F. E. Devlin, 79 Mackay Street, Montreal, stating the nature of the accommodation required, and every attempt will be made to satisfy the requirements of each.

A Mode of giving a Vapor Bath to a Patient in Bed.—A writer in the *Presse médicale* for June 19th recommends the following mode of giving a vapor bath without removing the patient from bed: A woolen blanket is placed on the bed under the patient, who keeps on his night-robe. Under each foot and at each side of the body a stone bottle containing boiling water is placed, each bottle having previously been wrapped in a very wet towel and the whole covered with flannel. After the bottles are placed in position the woolen blanket is wrapped around the patient, and another blanket and an eiderdown quilt are put over him.

At the end of fifteen minutes the patient is in a veritable vapor bath, which induces a profuse perspiration, and he is kept in this condition for a varying length of time according to the case. In order to favor sweating, one or two cupfuls of some hot infusion should be taken. After the patient has remained a sufficient length of time in the bath, the woolen blanket under him and the bottles are carefully withdrawn without exposing him, and he is then wiped dry under the other blanket and the quilt. At the end of twenty or thirty minutes the patient may have a change of linen.

Methylene Blue in the Diagnosis of Renal Permeability.—At a recent meeting of the Société médicale des hôpitaux, a report of which is published in the *Journal des praticiens* for June 26th, M. Achard stated that he had gathered fifty new observations and performed eighteen autopsies which confirmed the results previously obtained by him. In twenty-two cases of normal elimination of methylene blue he had always verified the integrity of the kidneys at the autopsy. Of twenty-eight cases of tardy elimination, thirteen had shown renal lesions at the autopsy.

It was not only to medicine, properly so called, he said, that the test of methylene blue might furnish useful results, but also to surgery, by indicating if the kidneys were performing their functions in a normal manner. He cited an interesting case which had come under Dr. Schwartz's observation as a remarkable demonstration. In this case the patient was suffering from nephrydrosis, and catheterism of the ureters enabled the physician to collect the urine from each kidney separately. It was ascertained that the methylene blue did not pass through the kidney of the diseased side, but later on through what had been considered the healthy kidney, the urine of which, moreover, contained traces of albumin.

Concerning the therapeutical effects, due to the action of the methylene blue on the albuminuria, ordinarily there were none.

M. Hirtz stated that he had employed this drug six times in cases of albuminuria without any appreciable benefit. M. Chantemesse had given from twelve to fifteen grains a day with no result.

Lectures and Addresses.

THE PHYSICIAN UPON THE WITNESS STAND.

BEING AN ADDRESS DELIVERED
BEFORE THE FELLOWS OF THE RHODE ISLAND MEDICAL SOCIETY,
At the Annual Meeting, in Providence, June 3, 1897.

By WALTER LEE MUNRO, M. D.,
SURGEON TO THE RHODE ISLAND HOSPITAL, ETC.

Theoretically, the position of the medical expert upon the witness stand should be a proud and dignified one. His selection to perform such a duty should imply a deserved tribute to his intelligence, education, and experience.

Practically, the expert has fallen in honor, until, from being the trusted interpreter of science for the benefit of the judge and jury, he has become the paid partisan of one or the other side, selected for his willingness to lend his aid in support of the particular views which that side wishes to establish. He is even to be congratulated if he does not find himself sunken still lower and simply a shuttlecock between the rackets of opposing counsel, each of whom is striving to use him and his *confrères*, not as a means of eliciting truth, but with the plain intent of hopelessly confusing the jury upon the issues involved.

In a recent case of much note, in which so much and such conflicting medical evidence was introduced that it was practically thrown out by the jury when they came to consider the case, an expert, just released after a prolonged and skillful cross-examination, said to the cross-examining lawyer, "You did your best to confuse me." "Oh, no, doctor," was the bland reply, "I have no intention of confusing you; it's the jury I wish to confuse!" How well he succeeded I have already said.

The term witness, as applied to the medical expert, is a misnomer. It only rarely happens that the physician has any personal knowledge of the case in which he is called as expert. From the nature of his business it does happen to him, oftener than to his fellow-citizens, to be summoned as a witness to matters of fact—and just here we meet with one of the crying evils of our present judicial system to which I will refer briefly.

Rhode Island, in common with all New England and some of the other States, derives her judicial system from Great Britain. By the English law all communications between lawyer and client are privileged and inviolable. This would be admirable, were it not necessary to add that, under this same law, there are no communications between physician and patient, however imperatively demanded by the necessities of the case, however private in their nature, however damnable to innocent and guilty alike, but must be given to the public, without reservation, by the physician upon the witness stand, under penalty of fine and imprisonment if he refuses to answer.

The distinction is hard to find. Surely the communications between lawyer and client are not, as a rule, more confidential and only rarely as confidential as those between physician and patient. One author has ingeniously suggested that the distinction rests upon the fact that the lawyer is a component part of the judicial system, and, hence, anything which tends to weaken the relation between him and his client helps to weaken the system; whereas the physician, being outside of the system, is not granted any such consideration. This may be logical; surely not humane. The perception of this fact has led to a modification of the rule regarding confidential communications in many States. In some States, notably in New York, statutory enactment has gone to the other extreme and forbids the physician to speak, even though justice is clearly defeated by his silence—*e. g.*, in a trial for murder the testimony of the physician will convict his patient and, hence, possibly free innocent persons from suspicion: he is not allowed to speak.

Again, in a suit against a life-insurance company for the amount of a death claim, the testimony of the family physician would establish the fact of fraud, the insured knowing himself to be incurably sick when application for insurance was made: the physician is not allowed to testify.

Privileged communications, as established by law, are founded in public policy, "because greater mischiefs would result from requiring or permitting their admission than from wholly rejecting them." It is difficult to imagine any sound reason in public policy for extending the privilege, as in the cases cited above, so as to make it a cloak to crime and an impediment to the administration of justice. It is doubtless owing to a perception of these defects that the laws of New York in this regard have been so frequently amended. The physician is now allowed, under certain restrictions, to give evidence as to the testamentary capacity of his patient. He is not, however, allowed to testify as to the condition of his patient who is a lunatic or common drunkard. He is driven to absurdities when he is forbidden to say, in court, of what his patient died, although the law itself has already obliged him to make and file a certificate of the probable cause of death.

All these defects are, however, but defects in a strong and merciful provision of the law. While the statutes of New York, as interpreted by the judiciary, may go too far, they are a thousand times preferable to our law or absence of law, which compels the medical witness to violate the most sacred confidences and outrage every rule of common decency, if required to do so upon the witness stand.

Surely, with the wisdom gained from observing the practical workings of the laws regarding privileged communications in other States, a statute could be framed and adopted by our own legislature which would be acceptable to medical and legal professions alike. To whom would it be more natural to look to initiate such a movement than to the members of the Rhode Island Medical Society?

To return to the subject of which I was speaking: the expert is not properly a witness. He is called into court because his education, training, and experience fit him to act as the sworn interpreter, to the judge and jury, of the facts and theories of medicine, or other sciences or arts, as it may happen, such matters being beyond the comprehension of those uneducated in that particular specialty.

Wharton says: "The distinction between expert witnesses and ordinary witnesses is this: the non-expert witness testifies to conclusions which may be verified by the adjudicating tribunal; the expert to conclusions which can not be so verified. The non-expert gives the results of a process of reasoning familiar to everyday life; the expert gives the results of a process of reasoning which can be determined only by special scientists."

The position of the expert is thus, in theory if not in practice, quasi-judicial; he is the *amicus curiæ* of the law. Our judges and lawyers are slow to recognize and acknowledge this fact.

In Germany and France the medical expert still retains his position as one of the appointed officers of the court, a recognized part of the judicial system, and, as such, enjoys honor, and his opinions are accepted as authoritative. His statement is final; he is not confronted with opposing experts; he is not subject to cross-examination. He is paid by the court and continues to serve for years.

This is the ideal, but, unfortunately, it is not in harmony with nor acceptable to the judicial systems of England and America, which show very great regard for the rights and privileges of individuals, and very little regard for absolute authority, of whatever sort, except the obsolete traditions by which the legal profession is too often guided.

As early as 1555, we find one Saunders, J., eulogizing the legal profession as follows: "And first I grant that if matters arise in our law, which concern other faculties or science, we commonly apply for aid to that faculty or science which it concerns. Which is an honorable and commendable thing in our law. For thereby it appears that we do not despise all other sciences but our own, but we approve of them and encourage them as things worthy of commendation." And they continued to approve of them and encourage them, as expounded by their expert professors, and the latter retained their honored positions as *amici curiæ* for more than two centuries.

In the latter part of the eighteenth century we first find reference made to paid partisan experts. There is no question so poor that it has not two sides. Hence the moment an expert was called in by one party an opposing expert was summoned by the other side, and thus began the fall from grace which has robbed the expert of nearly or quite all of his old-time honor, and, only too often, has made him a laughing-stock for the public and converted so-called judicial proceedings into a farce to be settled one way or the other, according to the length of the purses of the respective litigants.

The late Dr. Wilbur, of Syracuse, wrote: "Expert testimony should be the colorless light of science brought to bear upon any case where it is summoned. It should be impartial, unprejudiced. There should be no half-truths uttered, and suppression of the whole truth is in the nature of false testimony."

No nobler standard for the expert could possibly be established, and there have been and are many expert witnesses whose constant endeavor it is to live up to it. Such are deservedly honored and sought after. That they are in a hopeless minority will be shown to be the fault of the system which employs him rather than of the individual expert. The result, however, is the same wherever the blame is to be assigned, and the abuse long ago assumed startling proportions.

Allow me to summarize one or two cases in point from the courts of our own State.

Cause I.—The validity of a will is in question and depends upon the testamentary capacity of its maker. It is in evidence that he has suffered for months from chronic valvular disease of the heart; that two months before death he made a will leaving the bulk of his property to his relations; that six weeks later he made a second will leaving all of his property to charity; that within a week after making the second will, and about two weeks before death, he became delirious, with delusions of suspicion and persecution, and this condition continued up to his death, which occurred eighteen days after the making of the second will and about two weeks after he became delirious. It is further shown that he had real or fancied reasons, not delusions, for accusing his relatives of neglect and indifference prior to the making of the second will.

An expert of very considerable experience in the courts was employed by the parties wishing to break the second will. His testimony, as taken from the stenographic report of the case, I have condensed as follows, quoting *verbatim* wherever practicable:

In the first place, the man was of unsound mind at the time of making the second will—suffering from dementia, as shown by the manifestation of delusions a few days after. "If this man had delusions, he must have had an unsound mind; and if he had an unsound mind, he could not have acted honorably and justly in transactions."

2. His insanity was due to disease of the heart, which, though never manifested, "had probably existed for a long time as a latent though dominating influence in his life. Such a disease of the heart, that fails to send a

proper supply of blood to the brain, is early manifested by mental derangement."

3. The delusions attending any chronic disease of an exhausting nature, just before death, are latent, but dominating for a long time before becoming manifest. (Upon its being suggested, by cross-examining counsel, that this latent but dominating influence existed when the first will was made, the expert replied, "I don't know but it did—if he made an unjust one then," from which we infer that the character of the will made, as regarded those retaining the expert, was to be the test of the presence or absence of the "latent but dominating influence.")

4. "It is possible, but not probable," that "a man might suffer from chronic valvular disease of the heart for months, to the point of considerable failure of his bodily strength, without the development of mental disease, and with a normal capacity for the transaction of business."

5. "Some men have delusions very long without manifesting it. They do business and make contracts. They make great mistakes sometimes; but they transact business. Men with concealed delusions do business during life and occupy prominent positions in the community—financial, social, and official."

(Upon the court asking, "If they are never manifested, then how do you know that they have them?" the expert replied: "We know it by the great errors that sometimes occur, which make it evident that such a disease may have existed, though the delusion never has been manifested"; which ingenious, if illogical, reasoning was qualified a moment later by the admission that "people not so affected were also liable to make mistakes and make grave errors, but this making of errors is symptomatic of something.")

6. Business men holding many and important positions of trust and responsibility, having also valvular disease of the heart, as ultimately manifested by sudden death from heart disease, there having been no previous marked symptoms of ill health, may continue competent to transact business up to death, because they have acquired "a habit and method which they are able to continue. What they have been accustomed to do all their lives by habit and method, they do automatically. But when such men are called upon to do an act that calls for reason, judgment, and memory, they make failures. Though they are competent to do business that for all their lives they have been accustomed to do, they are not competent to do the right thing just at the needed moment."

7. Men of large affairs found dead at their ordinary occupation, having transacted and being competent to transact business up to the last moment, "do not die of heart disease." "The disease begins at the brain and goes down to the heart."

Finally, delusion exists in a quiescent state before it is manifested. "It must develop, as everything incubates, step by step. Delusion does not spring out like lightning from a cloud. It is step by step that that delusion has been forming. It then becomes manifest. It has existed before."

This testimony was somewhat softened and modified by that of the associate expert. If this be accepted as scientific and truthful, I may be permitted to draw one or two logical and incontestable inferences from it.

1. That all persons suffering from a valvular disease of the heart have an "incubating" but concealed delirium for a considerable but indefinite time before death, which, though latent, exerts a dominating influence over their lives. This delirium may never become manifest.

2. Though these persons may from force of habit continue to transact business and fill positions of trust up to the time of their deaths, yet the knowledge of the existence of disease of the heart in them is sufficient to discredit their sanity and render invalid, or at least open to suspicion, their each and every act, even though they may perchance, as in the case of the late Secretary Windom, be administering the finances of the United States.

Cause II.—The mental condition of an old lady, seventy-six years of age, blind and feeble, is inquired into, the question being as to the necessity for the appointment of a guardian.

The expert who appeared in Cause I is retained to testify to the sanity of the lady and the lack of any necessity for a guardian.

It is in evidence that the lady is seventy-six years old, quite blind, somewhat deaf, very gentle and tractable, and entirely free from delusions, but so feeble-minded and forgetful as to be unable to recall what she had last eaten, what day of the week or month, or what month it was; that to such questions as the date of her husband's death, her own age, her sister's age, etc., she returned constantly varying answers, according as the questions were asked at different times; that she stated that she had some property, but she did not know where or what it was; that she had not made a will since her son died; that later she stated that she had made a will; that many of her apparently most rational and collected answers were known to the by-standers to be incorrect; that she herself failed to see the inconsistencies in her replies when they were pointed out to her; that this condition had existed in varying degrees for several years. On the other hand, her memory for persons, things, and events of years ago is very good. She has no enemies to her knowledge.

The expert having heard this testimony and having been present personally at the examination of the patient, at the same time with the physicians giving this testimony, testified:

1. "That there was nothing in that two hours' conversation that indicated that she was of unsound mind."

2. "That there was no sign of senile dementia."

3. That she had no necessity for a guardian; "that she had always had a *guide* and needed one now."

4. That if he had stated, in consultation, that she needed a guardian, it was in the office of adviser that he intended; not that she should be put under legal restraint.

5. That she did not need a guardian—1st, because she was not insane; 2d, because she was not vicious; 3d, because she was not incapacitated for managing her own affairs.

6. That he "thinks she can remember, but doesn't think she does, and she makes no effort."

7. That he does not think her competent to take care of business, but believes her "competent to do the right thing"; which he explains to mean that "she would not do the wrong thing under advice."

8. That she is not competent to take care of business and property, in a business way, but he believes her competent to select some one to do so, "because he sees no mental defect in her."

9. That, so far as he knows, delusions always accompany senile dementia; that a person of very defective memory may have a sound mind, and the absence of memory does not affect the power to reason.

Finally, because she has always had a guide, "she needs a guide"; "if he said a guardian, at time of consultation, he made a mistake." "That he sees no reason why she is not of sane mind."

In the consideration of this case he was opposed by his co-expert in the first case, who, on the same testimony and with similar opportunities for observing the defendant, testified, with two other physicians, that the lady was incapacitated and incompetent to care for her person or estate by reason of senile dementia. He was supported by two physicians, one of whom, however, saw the defendant but once, and, in testing her sanity, confined his examination largely to matters and events of the past, points on which senile dements are apt to be strong, and who, when asked as to her having forgotten whether she had made a will or not, admitted that that could hardly happen with a sound mind.

The expert would seem to have been much more exacting in his requirements as to what constitutes an unsound mind in this case than in the first.

Since the examination it has been demonstrated that the aged defendant has organic heart trouble. If this had been in evidence at the time, it would, of course, in the light of Cause I, have rendered the hearing entirely unnecessary.

The salient points to be deduced from his testimony are these:

1. There may be very great loss of mental faculties without any unsoundness of mind, provided there are present neither delusions nor viciousness.

2. That "a guide" is much more suitable to care for the person and estate of such an individual than that legally appointed functionary, a guardian.

It may be observed that the court decided in favor of a guardian.

With these two cases in mind, who can take umbrage at the statement of Wharton, "There is no hypothesis so monstrous that an expert can not be found to swear to it upon the stand and to defend it with vehemence"; or that other and still stronger dictum of Judge Davis, "If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my judgment, that of the medical experts."

Admitting that medical expert testimony no longer receives the respect nor carries the weight of authority that it once did, let us consider to what its decline is attributable.

At the outset, the lack of any proper qualification as to the competency and honesty of the proposed expert must be held responsible. "The courts accept any one as an expert and trust that cross-questioning will show that he is an ignoramus, if he really is such." Manifestly, the law has no right to recognize any one or other school of medicine. Science is ever advancing, and that which is all but universally subscribed to to-day may be forgotten or condemned to-morrow. Hence every medical man of whatever school, or even of no school at all, must be accepted if brought forward by either side, provided that he proves upon examination to possess qualifications, which may vary widely according as the whim of the presiding judge or the exigencies of the case may dictate. This rule has even been extended, in certain cases, to admit nurses and medical students to expert standing. Practically, the fact that the would-be expert is a licensed practitioner carries with it presumptive evidence of his possessing a sufficient degree of knowledge and skill. The first few questions addressed to the expert are for the purpose of bringing out his qualifications. It is within the discretion of the opposing counsel to cross-examine the witness on this point if he sees fit. If counsel are disagreed it becomes a matter for the court to decide. Where there is no contention the judge can not interfere, unless it happens that of his own personal knowledge he knows the expert in question to be unworthy of belief. This exceedingly loose method of testing the proposed witness, by sanctioning men of no standing or experience, does much to degrade the value of medical expert testimony.

Again, science itself is advancing with prodigious strides, and nowhere is this progress more marked than in medicine and surgery. It follows necessarily that there can be no certainty of agreement even between witnesses of ability and honesty, and this fact is often taken advantage of by counsel to throw undeserved ridicule on their conflicting theories. If, however, their opinions, and reasons therefor, are stated in plain terms, without ambiguity and without heat, above all with no suspicion of partisan bias, they will at least be heard with respect and go to the jury without discredit.

Moreover, the medical man himself is much to blame.

Appreciation of the honor still supposed to pertain to the position of expert witness, a still keener appreciation of the possible fees to be gained, prior interest in the case, and a host of other motives, good and bad, lead to too great willingness to serve upon his part. Too often, as I have said, the medical expert goes into the case as a pronounced partisan, and grossly discredits the science of which he professes to be the exponent by his one-sided presentation of the points involved. He thus becomes a fair prey for the cross-examiner. Too often the medical expert, even if of undoubted ability, fails to appreciate the importance of carefully preparing himself for the ordeal, so as to do credit to himself and his calling. He thus exposes himself to attack and rout, and the opprobrium falling upon the profession is the greater in proportion as his standing in the community is the more assured.

By far the greatest responsibility for the decline of the expert lies with the system itself under which he serves. The expert witness is no longer, as a rule, called into the case to interpret to judge and jury matters of evidence, which are to them incomprehensible, but which his education and experience fit him to explain. He is summoned by one or the other party to the suit, either because he is known to incline toward their side of the controversy, or because it is believed that he can be brought to advocate the opinions which are to be proved. The expert thus enters into the case with a strong bias. With this bias it is but natural that he should embrace with alacrity whatever helps to establish his client's case, while he looks with a cold and critical eye upon anything which tends to weaken it. It is known, too, to the judge and jury that he has been retained to testify in favor of the party calling him. "Hence it is that, apart from the partisan temper, more or less common to experts, their utterances, now that they have as a class become the retained agents of the parties, have lost all judicial authority and are entitled only to the weight which a sound and cautious criticism would award to the testimony itself" (Woodson).

The method of applying this "sound and cautious criticism" was thus summarized in a recent address by a distinguished corporation counsel:

"The expert gives his opinion and his reasons for it. An advocate, more or less learned in the law and superficially prepared for the purpose, with the aid of the opposing expert, puts the witness through a cross-examination, the object of which is not to learn the truth, but to demonstrate that his opinion is wrong, his reasons unsound, and the witness himself either ignorant, dishonest, or ridiculous. The expert on the other side is then called and gives a contrary opinion with grave and weighty reasons in support of it. The opposing lawyer then tries to show, by cross-examination, that this witness is as ridiculous, dishonest, ignorant, and unsound as his own expert. The whole matter is then referred to the jury, who were admittedly, at the outset, incapable of drawing a correct inference, but who, edified and instructed by the dignified performance which has taken place before them, are now expected to give to the conflicting theories of the 'experts' the weight which 'a sound and cautious criticism' would award to them. The wisdom of such a final reference must be apparent; the capacity of the ordinary jury for 'sound and cautious criticism' in matters of science needs no eulogy here" (Mather's Address before the American Academy of Railway Surgeons in Chicago, September 25, 1896).

Not infrequently the cross-examination of the experts develops into an undignified contest of wits—a wrangle, in fact, between witness and cross-examiner, in which the latter has every advantage from his knowledge of the courts and court procedure and the entire absence of embarrassment at being placed in an unaccustomed position. His very ignorance of the point under discussion stands him in good stead, as he absolutely fails to see the many scientific limitations which hedge about the expert in forming his opinion, and can count upon the jury, more ignorant than himself in matters of science, for sympathy in his effort to hold the medical expert up to ridicule. A powerful and most unjust weapon is placed in his hands by giving him the right to demand a categorical answer. The expert, familiar with his subject, realizes fully that such an answer is impossible. He gets but little comfort from the court, who, when appealed to, replies: Answer Yes or No, and explain afterward, if you wish; which amounts to saying, Commit yourself to an untruth if the counsel wishes it; you can deny or modify it afterward. As well say to the pugilist, Allow yourself to be knocked down—you will be permitted to get up again. Thus we see how the judicial system itself, as applied to the experts, has been the most potent agent in their degradation.

While the medical profession has lost much of honor and dignity through the poor showing of its members upon the witness stand, it is not the only loser. Justice herself, and her servants, the legal profession, whose function it is now to support, now to subvert her, mourns the loss of the *amicus curiæ*, the trusted adviser whose disinterested and faithful expositions of science did much to smooth her pathway.

Much thought has been bestowed upon the problem of how to restore the expert witness to some of his original influence and authority, and many theories have been proposed.

Before considering them, one, which stands alone, is worth noting because of its absurdity.

Rossiter Johnson, in an article in the *North American Review* for June, 1884, proposes to accomplish the reform by depriving the medical expert of his fee and allowing him only the compensation of the ordinary witness, which, he adds, "is not compensation at all," maintaining that service upon the witness stand is a species of taxation to which all are liable, and that for the expert to receive the same pay, for the advice given there, which he would receive for it if given to an individual firm or corporation, is to exempt him from taxation. He would deny to the expert any right of property, as against the public demand, in his education, skill, or experience, claiming that there is less reason for paying him for giving one hundred dollars' worth of his knowledge than for paying the business man for giving one hundred dollars' worth of his time, saying, "For the time thus used up can never be recovered, but the knowledge thus imparted still remains with him who imparted it."

To the honor of logic and common sense be it said that the specious fallacies of his reasoning were exposed at once by the members of his own profession. If summoned to testify to matters of fact the physician rightly receives the compensation of the ordinary witness; but, "if the court may call the physician from his practice, not because the facts of the case are matters of his personal knowledge, but because the medical questions involved are of his everyday experience, and after a hard trial on the witness stand may dismiss him with the penny of the ordinary witness, what shall prevent the judge from calling the same expert to-morrow, occupying his day, and dismissing him as before? Indeed, since he happens to be a physician of wide practice, thoroughly informed in his profession, and now quite at home as a witness, why may not the court pay him the compliment of a summons the next day, and the next—in short, keep him pretty constantly in attendance as a handy man, whose 'testimony is strictly first-class and offered at a tremendous sacrifice?' Well might that physician, at the end of the term, looking at his pennies, say with the preacher, As it happeneth to the fool, so it happeneth even to me; and why was I then more wise" ?

This would surely accomplish one of the common results of taxation, since it would compel the wise and learned to conceal their attainments in order to escape the imposition of the tax.

All schemes for the rehabilitation of the medical expert recognize the hopelessness of any reform which would retain the paid partisan witness, called by a side, and hence, as a rule, with a bias as hopeless as it is natural. It therefore happens that the various plans range all the way from the entire abolition of expert testimony to the appointment of an official expert, whose report shall be made in writing to the court and shall go to the jury with the stamp of official authority, no opportunity being allowed counsel for either side to insult his dignity or ruffle his composure by so disturbing a thing as a cross-examination. Without doubt the adoption of such a method would place the expert upon the highest possible plane and assist greatly toward the procurement of abstract justice; but it savors of despotism and is not in harmony with the genius of our institutions. Besides, abstract justice is very seldom what either side of a controversy desires to obtain.

In France the official expert can be examined, but the questions to be asked are determined beforehand by the court. Of the various modes of procedure in force in foreign countries the most practicable is that of Scotland, where the expert files a report upon which he may be cross-examined.

Within a few months this question was discussed by the able jurist whom I have before quoted.* His conclusions are of value as embodying most that is worth retaining in the many propositions. They are of special interest to us, as citizens of Rhode Island, from the many points of similarity between the remedies he advocates and the mode of procedure already established by our statutes.

After speaking of the present system of paid partisan experts, only to condemn it, he concludes:

"The remedy lies in the designation by the court, in each case, of the experts who shall be called upon to testify. Whether agreed upon by the parties or selected by the judge, the experts should receive their appointment from the court. They should be officers of the court, sworn and acting as its commissioners for the better ascertainment of the truth." He would thus "insure the selection of actual experts," whose impartiality and disinterestedness could be counted upon, and hence, all partisanship being out of the question, the lawyers for each side would unite in desiring the selection of the expert from those most competent.

He "concedes the right of the expert to a reasonable or even liberal fee. . . . Nor would he leave him, for the payment of his fee, to the hazard of the collection of a bill of costs. The payment of his fee should be required of the party demanding the appointment of the expert and as a condition precedent to the appointment." After stating that "logical adherence to the theory that the expert is the assistant and adviser of the court and jury, about matters of which both are ignorant, would require that he report his opinion with his reasons; orally or in writing, and that the jury should accept the opinion as conclusive of the question on which it bears," he regretfully admits that, since the opinions of the experts might differ, he "supposes that cross-examination must be admitted to play its part, though the moment the official expert submits to cross-examination he loses something of his dignity and independence as an agency and officer of the court."

Further, in civil suits arising out of personal injuries, "the injured person should be compelled to submit himself to a personal examination by the court's experts."

Having followed this practical jurist in his quest for the ideal, let us turn to the statutes of our own State, antedating this discussion by more than three years, and see what we find there:

Chapter 244, Sections 16 to 18, inclusive, of the General Laws of Rhode Island, reads as follows:

SEC. 16. Any justice of either division of the supreme court, sitting in chambers, may, in any cause, civil or criminal, on motion of any party therein, at any time before the trial thereof, appoint one or more disinterested skilled persons, whether they be residents or non-residents, to serve as expert witnesses therein: Provided, that the reasonable fees of such experts, according to the character of the service to be performed, to be fixed by such justice, shall be, by the party moving for such appointment, paid to the clerk of such division at such time as such justice shall prescribe; and the amount so paid shall form part of the costs in such cause. In criminal cases, in the discretion of the court, on request of the defendant, expert witnesses may be furnished for such defendant at the expense of the State, on such terms and conditions as may be prescribed by the court.

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* Mather.

Sec. 17. Such experts, being first duly sworn before some justice of such division to make a faithful and impartial examination into the matters and things committed to them, and true report thereon to make according to the best of their knowledge, belief, and understanding, shall thereupon proceed to view and examine such persons, matters, and things, to read and hear such evidence, and in such manner, times, and places, whether by attendance at the trial of such cause or otherwise, and to report their findings, views, and opinions thereon, jointly or severally, orally or in writing, to the division where such cause shall be pending, before or at the trial thereof, in such manner as the justice appointing them, or any justice of such division sitting in the cause, shall prescribe; and such report, if in writing, shall form part of the record of the cause, and shall be produced in evidence at the trial thereof, and such experts shall attend at such trial until excused by the court: Provided, that any party to such cause may call and examine, or cross-examine, any such expert at such trial as to the matters, persons, things, views, findings, and opinions, contained, mentioned, or referred to in any such report, without further summons.

Sec. 18. In any action in any court, wherein damages shall be claimed for any injury to the body or health, physical or mental, of any person, and wherein an expert or experts shall be appointed by any justice under the preceding two sections, such justice shall require the person who is claimed to have been so injured, to submit to such reasonable examination or examinations of his body and health, physical or mental, by the experts so appointed, at such times and places as said experts may require, to enable them to make their report thereon to the court, and as such justice shall prescribe; and thereupon such action shall be continued until such examination or examinations shall have been made.

Our statutes thus provide for the appointment by any justice of the supreme court, in any cause, civil or criminal, where it may be demanded by either side, of one or more "skilled persons" (the statute is by no means limited to medical experts) "to serve as expert witnesses therein." They further mercifully provide that the same advantage may, in the discretion of the court, be extended to the defendant in a criminal case at the expense of the State.

Such "skilled persons," being first sworn, are then to inquire fully into the case, or such aspects of the case as are specified in their commission, and report their findings and opinions in such manner as the judge appointing them, or the judge sitting on the case, may direct, and such report shall be produced in evidence and the experts shall attend at the trial until excused by the court.

The authority of the court is given also for such examinations, physical or mental, as shall be required. It is further provided that such experts shall be subject to cross-examination. Their "reasonable fees" are, in a measure, guaranteed them by the provision which places this matter in the discretion and care of the court and provides for their prompt payment without waiting until costs are finally assessed and paid.

No State in the Union, so far as my researches have extended, has anything approaching this law in its simplicity and completeness. It is to be regretted that, though enacted several years ago, it is still, comparatively speaking, untried and unappreciated. It is doubtful whether its possibilities, in the way of securing strictly impartial expert testimony, have been realized fully even by the court.

Counsel for defendant in a recent action moved for the appointment of two experts, naming two who would be satisfactory. The court, however, suggested that, as long as there were to be two experts, he should appoint one of those already nominated and allow counsel for the other side to select the other, thus doing all that lay in his power to neutralize the law and secure partisan expert testimony.

It is further to be regretted that the statute is not a little more specific in matters of detail—such as fees, making and filing of reports, etc. .In the absence of any rules of procedure, growing out of precedent and custom, I have found judge and counsel alike uncertain as to the exact status of the expert witness and his relations to the court, the jury, the counsel, and last, but not least important, to the paid experts who may perchance figure in the same cause. I have endeavored, so far as lay within my limited opportunities, to obtain rulings of the court in regard to these matters, and, besides, am indebted to several of the justices of the supreme court for advice and guidance during my study of the law.

Whether intentionally or not, the statute, properly construed, distinctly repudiates the expert (whether medical or otherwise) as the *amicus curiæ*, the adviser and interpreter of the court in matters of science or special knowledge. He is distinctly denominated "*expert witness*," and hence is subject to the same rules of treatment as other witnesses, except as otherwise provided in the law itself. Thus his possibilities of usefulness are limited, in a degree, at the start.

The commission issued to such a witness contains more or less specific instructions, as, *e. g.*, "You have this day been appointed an expert witness, in the above-mentioned cause, to examine plaintiff as to her body and health, and to report thereon to the court in writing before the trial of said cause, and to attend the trial of said cause until excused by the court," etc.

His first duty, on notification of his appointment as medical expert witness, is to appear before some justice of the supreme court, not necessarily the one appointing him, and make oath to the faithful performance of such commission. He is, of course, at liberty to decline, if he sees fit. He then proceeds to examine fully into the case. While it is not necessary under the law, and might even at times prove embarrassing, yet it is the part of courtesy, and policy as well, to invite the attending physician to be present at the examination. His attendance should not, however, be allowed to disturb in any way the atmosphere of impartiality which should surround the court's expert.

So far the course of the expert is plain. When we come to the time and manner of making the report, he is, in the absence of any specific instructions from the court, thrown upon his own devices. In this question, too, is contained another and still more important one—namely, as to his right to hold any communication whatever with counsel on the two sides.

As to the matter of making a report: the speaker, being cognizant of a remark of the court to that effect, was under the impression that, being a court officer for the time and absolutely impartial, his report should be filed where it would be accessible to the counsel on both sides. On offering it to the clerk of the court, he was told that there were no precedents in that matter and he had better keep it either until he came into court or it was called for. He has since been informed by one of the justices that, while there is no rule, it is frequently the case that a report, more or less formal, is put into the hands of the justice appointing, or of the judge before whom the cause is to be tried. He was informed that it was not even necessary that the report should be made use of at all; that it might prove valueless, or embarrassing to both parties, and hence never be called for. This is manifestly incorrect, as regards the written report at least, as the statute distinctly says, "Such report, if in writing, *shall* form part of the records of the cause, and *shall* be produced in evidence at the trial thereof."

As regards communications with counsel, it has been ruled that inasmuch as a written report, if filed, would be open to both counsel, in the absence of such a written report, the expert witness was at liberty to confer with both counsel. It would be manifestly improper to confer in the sense of offering any suggestions in the preparation of the case; it would be no more than just for the expert to acquaint counsel with his findings and opinion, if asked.

To this it has been objected, by a second justice, that such communications would be improper, as they would make it possible for the counsel to prepare his rebuttal evidence, if necessary, in advance. To which the first justice would reply, Why should he not be given a chance to prepare his rebuttal in advance, if the ends of justice could thus be furthered, and the delay and expense of mistrials and second trials avoided?

The expert is surely on safer ground if he makes no advances to either counsel and contents himself with referring them to his report, if he has made one, or, in the absence of any report, simply acquaints them with his findings, on demand.

The court's expert witness is no one's witness, in the sense that he is liable to be called by either party, and is open to cross-examination by both. It behooves him, therefore, to know the ground whereon he stands. He may be repeatedly called and recalled, and is supposed to be in continuous attendance until excused by the court. His position would be a much more dignified and convincing one, especially in the presence of opposing partisan experts, if his testimony was reserved until the last, and given in the light of all which precedes it, when his sworn impartiality could reconcile conflicting statements, restore order out of chaos, and carry conviction to the jury. Unfortunately, it is not in the province of the court to say how a cause shall be tried. It is the privilege of each counsel to decide for himself how he can best present his case; and the framers of the statute, while conferring much authority upon the expert, by creating him a "witness," have made him subject to most of the rules which govern witnesses.

The expert witness rarely knows of his selection until notified to appear and qualify if at liberty and willing to accept the commission. Hence no opportunity is afforded him of arriving at any prior understanding as to his fees.

In prescribing only "reasonable fees" and leaving the determination and collection of them within the control of the justice, the law imposes a disagreeable but very necessary responsibility upon the court. In further providing that such fees shall be paid at the time and by the party demanding the expert, although they are finally to be assessed in costs, the framers of the law were actuated solely by a regard for the rights of the expert. It is conceivable and has been known to occur that bills of costs, after being assessed, have remained unpaid.

It is in the power of the justice to exact a deposit from the counsel asking for the appointment of the expert; but a practical difficulty arises in the uncertainty as to what the length and kind of service and consequent fees will be. *There is absolutely no basis of remuneration known to our laws.* The court is disposed to be reasonable, even liberal, and will protect the physician, in the collection of his just fee, by every means in its power. I can state with authority that any lawyer or legal firm who, having asked for the appointment of an expert, fails to pay him, will find it difficult to obtain another expert from the court without having first made a sufficiently large deposit to cover his possible charges.

These remarks upon the much-mooted fee question have no bearing, of course, upon the compensation or payment of the partisan expert.

This law, admirable as it is as a whole, falls short of the ideal in two important particulars:

It does not do away with the evil of partisan experts.

It provides no guarantee that the commissioned experts shall be actual experts save the fact of their appointment by the court; and this is fallacious, since, in the absence of any contention between the opposing counsel, the court is bound to appoint the experts whom they suggest, unless it knows of positive reasons for not so doing.

Until the law arises in its majesty and says the court *shall* appoint the expert witness in *every* case where expert witnesses are desired, I see no way of dealing with the first of these difficulties, and this will be very slow to happen under our democratic form of government.

The second shortcoming of the present law would seem to be capable of being remedied by the establishment of a sufficiently large class of qualified experts from whom the court experts should be selected.

I am told that this is impracticable; that the legal fraternity and their clients, the public, would not submit to the imposition of any such qualifications as to experts. I reply that the qualifications proposed should have for their basis education, experience, and time of service; in fact, that they should find their justification in common sense; that no considerations of schools or dogmas should enter into the qualification, except so far as they are necessary to protect us against the ignoramus, the quack, and the charlatan.

Such a class of qualified experts already exists under the law in New York State, as far as lunacy commitments are concerned.

Let our legislature amend the present law regulating the appointment of expert witnesses by the establishment of such a qualification; let them free it from every suspicion of political or partisan bias, and they will find the public ready to adopt and abide by it, as they are by anything which they are convinced is for their good, and justice will be better served at the hands of her medical experts here in Rhode Island than anywhere else in the length and breadth of our country.

If these feeble words of mine should exert the slightest influence toward the inauguration of these reforms; if they should contribute one iota toward setting in motion the forces which must work together for their accomplishment, this paper will have attained its object. It will not have been written in vain.

The Treatment of Interstitial Nephritis.—Huchard (*Revue médicale de l'Est*, June 15, 1897; *Lyon médical*, July 11, 1897) recommends an occasional purgative—a dose of jalap or of Hunyadi János water. The diet should consist of milk; legumes; a few eggs; and hardly any meat, always well cooked and not "high." The patient should avoid soups; fish, especially sea fish; conserves; pork, except ham; salted articles; game; strong cheeses; and alcoholic drinks. Three or four cachets containing fifteen grains of benzonaphthol may be taken. For twenty days of each month, from five to eight grains of sodium or calcium iodide may be taken daily.

Original Communications.

ANÆMIA IN TUBERCULOUS JOINT DISEASES AND OSTEOMALACIA.

A STUDY OF FOURTEEN CASES TREATED WITH BONE MARROW AND BULLOCK'S BLOOD.

By CHARLES H. JAEGER, M.D.,
HOUSE SURGEON, HOSPITAL FOR RUPTURED AND CRIPPLED, NEW YORK.

In the treatment of tuberculous joint diseases, after meeting the local indications with suitable apparatus, etc., we strive especially to improve the general health and put the patient in the best possible condition to withstand the long siege of sickness.

The more or less close confinement to the house, or, perhaps, even to bed, and the long-continued suppuration from abscesses which may be present are soon followed by a lower vital tone. The child who was playful and active becomes listless, tires easily, and lies down most of the day, thus taking even less exercise; the appetite diminishes, and the general condition fails. The patient is pale, and examination of the blood shows a diminished number of hæmocytes and a smaller percentage of hæmoglobin.

This is frequently seen in institutions where many children are gathered together, the confinement producing a condition known as "hospitalism."

This depleted condition, therefore, demands our earnest attention. In the hospital we give all tuberculous children cod-liver oil. Many of them improve on the administration of iron, alone or combined with arsenic and strychnine. Some, however, do not respond to these various measures, and we are often at a loss to know what therapeutic agent will meet the requirement.

During the past spring we used a preparation of red bone marrow and bullock's blood called carnogen, which was given in two-drachm doses twice daily. The improvement was marked and soon noted, the children rapidly gaining in color and strength, and some considerably in weight.

I wish to express my thanks to Dr. V. P. Gibney, surgeon-in-chief to the Hospital for Ruptured and Crippled, for allowing me to carry out the observations.

A brief summary of the individual cases is given in the order that the improvement in each case may be seen.

Case I.—Boy, aged eleven years; right hip disease with suppuration. Admitted October 20, 1896. General condition was fair. October 26th, developed scarlet fever, and was discharged from the Willard Parker Hospital January 8, 1897. He was readmitted to this hospital on February 17, 1897. Condition was very poor. Color pale. Was emaciated and unable to walk from loss of strength. Had profusely discharging sinus from April 6, 1897. The exhibition of carnogen in two-drachm doses, twice daily, was commenced. The result was most gratifying. His strength returned and he is now able to walk. His weight increased very rapidly, also the corpuscles and hæmoglobin, which are shown in the following table:

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	51 lbs.	1,728,000	26,000	23 p. c.
April 21	53 "	3,620,000	18,000	35 "
May 4	61 "	4,260,000	18,000	38 "
May 20	62½ "	4,500,000	22,500	45 "
June 9	63 "	4,550,000	17,500	47 "

CASE II.—Girl, aged six years; caries of spine and left hip disease. Admitted September 29, 1896. Duration of disease, a year and a half. She was in good general condition. Hip and spine symptoms not acute. Had no discharging sinuses. Patient contracted measles in December, which left her very much depleted. Basham's mixture, cod-liver oil, and albuminate of iron were exhibited with very slight benefit. On April 6, 1897, carnogen was commenced and all other remedies excluded. Improvement was marked. Color returned, and weight increased rapidly, as may be seen in the accompanying table:

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	28¼ lbs.	4,120,000	13,000	51 p. c.
April 22	33 "	4,470,000	13,500	51 "
May 4	Not taken.	4,820,000	14,000	65 "
May 19	Not taken.	5,200,000	13,500	74 "
June 9	Not taken.	5,300,000	9,750	78 "

CASE III.—Boy, aged eight years; dorso-lumbar Pott's disease. Duration, three years. Admitted May 11, 1896. General condition fair. In September he returned from the country in good condition, but with a large abscess on his thigh, which was opened and three ounces of pus removed. From that period his condition became worse. On October 23d the abscess opened and has continued to discharge freely ever since. February, 1897, condition was very poor; became pale, thin, and emaciated. Arsenic, iron, strychnine, and cod-liver oil were exhibited with no apparent benefit. April 6, 1897, carnogen treatment was begun. The results are as follows:

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	37 lbs.	3,640,000	22,500	33 p. c.
April 21	37 "	4,250,000	16,500	42 "
May 6	37 "	3,970,000	36,000	36 "
May 20	36½ "	4,420,000	21,250	44 "
June 10	38 "	4,550,000	22,000	47 "

CASE IV.—Girl, aged twelve years; right hip disease. Admitted March 15, 1897, for correction of deformity. Has had no acute symptoms for more than a year. General condition fair; no abscesses. Somewhat pale and anæmic. Carnogen commenced on April 14th. Improvement in blood and weight shown in the following table:

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 14	58 lbs.	4,000,000	9,000	57 p. c.
May 4	60 "	4,500,000	9,000	63 "
May 20	61 "	4,780,000	10,000	66 "
June 9	64 "	5,100,000	9,000	72 "

CASE V.—Boy, aged eleven years; left hip disease. Duration, two years. Admitted March 25, 1897. General condition fair. Very pale and thin. No abscesses. Exhibition of carnogen was begun on April 14, 1897.

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 14	63 lbs.	4,640,000	23,000	59 p. c.
May 6	Not taken.	4,760,000	13,000	60 "
May 20	64 lbs.	4,970,000	11,750	67 "
June 9	65 "	5,170,000	10,570	73 "

CASE VI.—Boy, aged four years; right hip disease. Duration, two months. Admitted September 18, 1896. General condition excellent. Antitubercle serum was injected twice daily for two months, but no improvement was noticed.

October 19, 1896.—He developed scarlet fever.

December 9.—Was in good general condition. Had abscess, but it was not discharging.

February 5, 1897.—Condition was poor.

March 5th.—His hip joint was excised; condition very poor. Tubercular lesion in lung.

20th.—Condition worse; thin, pale, and emaciated, and running high temperature since operation. Iron, arsenic, cod-liver oil, and oxygen gas were administered with no benefit.

April 14th.—Carnogen and stomach tonic were given, with marked improvement in appetite and condition generally.

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 14	28 lbs.	3,800,000	Not taken.	29 p. c.
May 6	28 "	4,000,000	19,250	33 "
May 20	30 "	4,120,000	17,500	37 "
June 10	29 "	4,200,000	14,270	42 "

CASE VII.—Boy, aged five years; left hip disease. Duration, one year. Admitted January 12, 1897. Hip very acute; no abscess; very pale and anæmic. Carnogen treatment commenced April 14th. Improvement in color and weight was marked almost from beginning of treatment. Results may be seen in the accompanying table:

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 14	31 lbs.	3,250,000	12,500	46 p. c.
May 6	30 "	3,880,000	9,000	55 "
May 20	35 "	4,210,000	11,000	61 "
June 10	36½ "	4,790,000	13,000	64 "

CASE VIII.—Boy, aged eleven years; right hip disease. Duration, two or three years. Admitted April 6, 1897. General condition not good; very pale and thin. Had a discharging sinus and lesion in lung.

April 14th.—Carnogen administration commenced.

20th.—Temperature running high, due to lung lesion and absorption of pus. Condition was not so good.

June 2d.—Had three profusely discharging sinuses. Condition apparently failing, notwithstanding the fact that he has not lost in weight, and there is a decided increase in the hæmoglobin and corpuscles.

DATE.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 14	51½ lbs.	4,860,000	11,500	54 p. c.
May 6	Not taken.	4,990,000	11,000	59 "
May 20	51½ lbs.	5,100,000	12,000	65 "
June 10	51½ "	5,140,000	10,500	68 "

Case IX.—Girl, aged nine years; caries of spine and left hip disease. Admitted February 22, 1892, in good general condition.

January 23, 1893.—Condition only fair.

January, 1894.—Abscess in left psoas region, which was aspirated and three ounces of pus removed. Abscess refilled, and during the next four months it was aspirated four or five times.

January, 1895.—Has a constant cough, a tubercular lesion in right apex, and a discharging sinus. Health not so good. Creosote administered.

August.—Returned from country in only a fair condition.

December.—Iron and cod-liver oil were exhibited with no improvement.

December, 1896.—A cavity in right lung; coughed considerably. Sinus discharging freely; pale and anæmic.

April 6, 1897.—Carnogen administered in two-drachm doses twice daily. Results seen in the following table:

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	42½ lbs.	3,800,000	8,750	42 p. c.
April 22	40½ "	4,260,000	8,750	50 "
May 4	Not taken.	4,600,000	10,250	55 "

Case X.—Girl, aged sixteen years; osteomalacia. Admitted November 14, 1889. Bones very much deformed. Tibia was bent to such an extent that while foot remained flat on the floor the crest of the tibia almost touched the floor.

February 11, 1893.—Patient fell and fractured left femur and it was put up in plaster-of-Paris cast.

March 14th.—Plaster cast removed and union found firm.

15th.—Fell in attempting to walk and fractured right femur, also left tibia and fibula. In July, went to the country and returned much improved.

April 6, 1897.—Use of carnogen begun. Results are quite marked, as shown in table.

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	Not taken.	4,900,000	7,500	60 p. c.
April 22	70 lbs.	5,100,000	9,250	71 "
May 4	70 "	5,250,000	10,000	75 "
May 19	71 "	5,340,000	11,000	80 "
June 9	71 "	5,500,000	11,000	87 "

Case XI.—Girl, aged seven years; right hip disease. Admitted February 10, 1896. Duration of disease, three weeks. General condition was fair. Improved by taking cod-liver oil and spending four weeks in the country. Hip became worse; large abscess formed, which was opened on September 4, 1896; it continued to discharge, and patient began to retrograde. She became very pale and anæmic. On April 6, 1897, administration of carnogen was begun. The results may be seen by the following table:

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	48 lbs.	4,980,000	16,000	42 p. c.
April 22	46½ "	4,990,000	19,500	42 "
May 4	46 "	4,490,000	14,000	40 "
May 19	45¼ "	4,540,000	15,000	47 "
June 9	45 "	4,650,000	12,000	52 "

Case XII.—Girl, aged seven years; double hip disease. Admitted August 21, 1895. Two years before right hip disease began. Patient was treated at another hospital and brace applied, which was kept on for fifteen months and followed by much improvement. Patient came to out-patient department of this hospital and left hip disease was diagnosticated. On admittance to the hospital her general condition was good, but from that time failed steadily, and in December a tuberculous area was discovered in the left lung. In June, 1896, triweekly injections of antitubercle serum were commenced and continued for three months, followed by no apparent benefit.

January 12, 1897.—Excision of left hip was performed, the wound healing in six weeks with only a slight suppuration.

April 6th.—The administration of carnogen was begun, and was followed almost immediately by improvement in general condition and color. Eyes became brighter and corpuscles, hæmoglobin, and weight increased.

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	31½ lbs.	4,200,000	11,250	43 p. c.
April 21	32½ "	4,400,000	13,500	46 "
May 4	33 "	4,780,000	13,000	48 "
May 19	Not taken.	4,800,000	10,750	53 "
June 9	Not taken.	5,200,000	11,500	56 "

Case XIII.—Girl, aged ten years; double hip disease. Duration of disease, three years and a half. When admitted on May 18, 1896, condition was good, but in November contracted scarlet fever, from which recovery left her in a very emaciated condition. In December she had the measles. Hip symptoms were acute. Had distressing night-cries, and condition remained very much depleted. On April 6, 1897, use of carnogen was begun.

May 25th.—Excision of right hip was made and carnogen was discontinued for one week, then resumed without further interruption. Color and general appearance improved. Increase in corpuscles, hæmoglobin, and weight may be seen in the following table:

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	Not taken.	4,770,000	9,000	70 p. c.
April 22	40½ lbs.	4,810,000	11,250	70 "
May 4	41½ "	5,000,000	9,250	70 "
May 21	41½ "	5,100,000	8,250	76 "
June 9	42½ "	4,850,000	9,000	76 "

Case XIV.—Boy, aged fifteen years; osteomalacia. Admitted January 13, 1890. General condition good.

January, 1893.—During the three years since his admission to the hospital the bones of his legs were purposely and accidentally broken several times and put up in plaster-of-Paris spicas. Patient was not able to stand alone. He was put on the use of various tonics, followed by no change in condition of bones.

February, 1897.—Began taking carnogen in two-drachm doses twice daily.

27th.—Some improvement noticed in general condition; bones about same as regards deformities. Moves about in wheel chair.

May 1st.—Able to stand with brace; is also able to sit upright. General appearance much improved. Color increased and stronger.

June 10th.—Able to stand without brace, but afraid to walk. Is bright, active, and very strong in his arms. Improved condition of blood can be seen in accompanying table:

Date.	Weight.	Hæmocytes.	Leucocytes.	Hæmoglobin.
April 6	34½ lbs.	3,290,000	11,000	69 p. c.
April 21	Not taken.	4,000,000	10,750	79 "
May 6	36 lbs.	4,840,000	11,250	85 "
May 20	36 "	5,000,000	12,000	87 "
June 10	36 "	5,210,000	11,750	91 "

OXYGEN GAS

AS A LOCAL THERAPEUTICAL AGENT IN PURULENT DISCHARGES FROM THE NOSE, EAR, AND SUPPURATIVE SURFACES.*

By W. PEYRE PORCHER, M. D.,
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It was the good fortune of the writer while abroad last summer to have the opportunity of visiting a home, under the care of Dr. George Stoker, M. R. C. P. I., of London, for the treatment of old ulcers, burns, chronic otorrhœa, ozæna, and all suppurative surfaces by the local application of oxygen gas. It was clearly demonstrated, both with the microscope and clinically, that the action of the gas was strongly antiseptic, aseptic, and analgetic. In addition to this it was highly stimulating, and by its rapid absorptive effect proved itself to be perhaps the greatest of tissue builders known to science. The aseptic and antiseptic influence of the gas is demonstrated because it is generated from chemicals under a high temperature, passed through strong caustic solutions, and finally through a solution of permanganate of potassium, so that it is absolutely free from bacteria.

Suppurative surfaces exposed to it were rapidly freed from all fœtor, and, strange to relate, pain was also abolished; cultures taken from the wound show that the *Staphylococcus albus aureus* and *citreus* rapidly increase, and all other bacteria disappear. It has been supposed either that the other bacteria are starved out by the gas or that the above-mentioned germs feed upon the others. The wounds were therefore inoculated with a pure culture of these bacteria, and it was found that the healing process was greatly accelerated thereby. It was therefore clearly shown that these germs were really the prime agents in the process of repair, and that their growth should be cultivated and encouraged rather than retarded, as has been supposed heretofore. In spite of the well-proved antiseptic and stimulating influence of the gas, it has been urged that ulcers which were daily washed with warm water and the limb rested would have healed without the aid of the gas. This may be undoubtedly true in some instances, but in cases where the ulcerated surface completely encircled the limb or covered an area extending from the knee almost to the ankle, the above theory would be manifestly absurd. Again, in chronic otorrhœa, with polypous tumors in both ears, it would scarcely be likely that the tumors would dry up and fall out with the aid of warm water alone; but I can bear personal testimony to the fact that this has been accomplished under continuous exposure to the gas, and also that I have seen a burned surface ten inches in diameter healed, protruding bone made to exfoliate, and old and intractable ulcers of all kinds entirely healed in a very rapid and satisfactory manner.

Thus far I have confined my personal investigation almost entirely to the local influence of the gas in cases of ozæna and chronic otorrhœa, and the results in the limited time at my disposal have been exceedingly gratifying.

Otorrhœa.—The first case in which the gas was used was that of a child of seven years of age of a scrofulous diathesis, who had had a purulent discharge from the ear almost since infancy. About one year ago she was brought to me. Suspecting that the discharge might possibly be caused by poor nutrition, difficult respiration, chronic rhinitis, etc., I removed, under chloroform, quite a considerable mass of adenomatous growth from the vault of the pharynx. The general health of the child improved greatly after this operation, but with occasional intermissions the discharge from the ear continued to be more or less profuse. In January of this year the child was brought back to me and the following condition was found: There was an overpowering fœtor coming from the ear, and the meatus was almost entirely occluded by a hyperostosis with general hyperæmia of the walls. Wishing to test the effect of the gas alone upon the case, I confined myself entirely to washing the ear out from two to three times daily with warm water and keeping it exposed to the action of the gas from four to six hours daily. Unfortunately, the parents of the child proved very intractable, and it was only with difficulty that I could carry out the treatment. After persevering, however, for a month or more, the condition of the ear was found to have changed greatly; there was no sign either of fœtor or discharge, and the general hyperæmia had lessened greatly. I then urged the parents to permit me to remove the hyperostosis, fearing a return of the condition. This unfortunately, however, they declined to permit, and the child was taken home, much to my regret. I have since learned that the operation has been successfully performed in another city.

Otorrhœa.—The next case was also a case of chronic otorrhœa of long standing in a child of six years. In this case, like the first, the external ear was so narrowed by the prolonged presence of the discharge that the child was almost completely deaf in that ear; the gas was applied here, as before, with daily washing of warm water; but in addition I made an application of nitrate of silver fused on a probe in order, if possible, more rapidly to reduce the hyperæmic condition. After about six weeks this exact effect was obtained, in spite of the fact that the parents persisted in bringing it to my office through all the changes of climate, cold and damp weather, with constant intermissions, when the weather was so intolerable that to venture out was out of the question. However, when the boy left me there were no signs of discharge or odor. The ear had opened up greatly, and the hearing was somewhat improved.

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* Read before the South Carolina Medical Association at the last annual meeting, April 28, 1897.

Ethmoid Disease.—Miss M. P., aged sixteen years, was referred to me by Dr. J. A. Mood, of Sumter, for chronic catarrh. She first noticed the catarrh after an attack of measles in 1890. I found the right nostril filled with crusts which she could not remove without much difficulty. The left nostril was not at all involved, but she had suffered greatly from incessant and long-continued headaches. She had consulted many physicians, and among them had spent three weeks under the care of a specialist in New York, who had sent her home with the statement that no improvement could be hoped for in the case. After thoroughly cleansing the right nostril of large masses of accumulated crusts, I detected pus extending between the upper and middle turbinates, and almost complete adhesion of the upper turbinate to the sæptum—the lower turbinate having retracted so much on account of the prolonged presence of the disease that it almost seemed to have disappeared. I broke up the adhesions between the upper turbinate and the sæptum and drilled into the ethmoid cells with the burr drill and the electro-motor, so as to give as free an outlet to the pus as possible. A solution of peroxide of hydrogen was then injected into the opening and it was packed with a strip of iodoform gauze daily.

This operation, as indicated by other writers on ethmoid disease, has had to be repeated frequently, but with great care to avoid puncturing the orbital cavity, and the washing and packing have been renewed daily. In order, in addition, to get the full antiseptic and stimulating effect the nasal mucosa has been exposed to the local action of oxygen gas from four to six hours daily. The result in this case has been perfect. She has absolutely no crust formation in the nose whatever, no fœtor of breath, and her headaches have stopped entirely. It is impossible for me to say just how much the oxygen gas was responsible for this improvement, but I am quite sure that I could never have hoped for so perfect a result without its aid. The patient left for her home feeling bright and cheerful, and entirely freed from the low, depressed condition in which she first came down.

It had been my intention especially to report the microscopical study of these cases, but, owing to some accidents and my inability to obtain exactly suitable apparatus, I have been unable to do so. I hope in future, however, to be able to show the micro-photography of each case, so as to demonstrate beyond question the accuracy of the observations made, as well as the results obtained.

The clinical results, however, as I said above, have been extremely gratifying. In each case of otorrhœa on which the gas was used there has been complete and prompt disappearance of the discharge and the fœtor likewise. In ozæna the crusts have ceased forming, the odor has stopped, and the nose has taken on a healthy appearance. Of course it must be said here also that I have not overlooked at the same time any other measures from which my patients might derive benefit. I have given as free outlet as possible to all pus cavities, and have given iodide of potassium internally for its alterative action upon the system and stimulating influence upon the excretory glands; but this did not in any way interfere with the local influence of the gas upon the organs or change its effect.

The influence of the gas on old intractable ulcers and large raw surfaces was very thoroughly demonstrated to me while abroad at Dr. Stokes's home in London. The ulcers were daily washed with warm water and kept exposed to an atmosphere of oxygen gas. The leg or arm was kept in a box, which was closed by means of a rubber funnel, and there was a glass top on the box through which the process of healing might be observed. The surfaces of the ulcer could be daily seen to become smaller and smaller, until it was completely healed. All pain and fœtor would disappear very soon after the treatment began, and the cicatrices left would be perfectly smooth and filled with blood-vessels. There were none of the usual star-shaped indurations and hard ridges which usually remain after a burn or old ulcer has healed, but the spot would resemble the healthy skin as it appears in the palm of one's hand more than anything else to which I can compare it. The failure of the gas to produce any extremely marked results by inhalation has been supposed to be due to one of two causes: either that the patient failed to absorb enough of the gas to stop the progress of the disease, or else the destruction of lung tissue was so great that the absorption of gas was rendered impossible. However, I am now experimenting with the gas in laryngeal tuberculosis, and I will report the results obtained in a later paper.

Note.—Since the foregoing was written there has been under treatment for laryngeal tuberculosis a patient whose sputa were filled with bacilli and who could only speak in a whisper. Her voice has been restored, the bacilli have disappeared, her cough has almost entirely stopped, and her temperature is normal. She has an excellent appetite and sleeps well. In her case I have also given creosote internally, and injected guaiacol with petroleum into the larynx.

99 Meeting Street.

THE
PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from page 74.*)

Part IV.

In the performance of abdominal operations success depends so much, as is well known, on the attention to the minutest details of technique, and these details vary so much at the hands of different skilled and experienced men, that I may be pardoned for speaking about them at some length. And there are several moot points involved in this question which are answered far differently by different men. Is Trendelenburg's position the most desirable one for operations on the female pelvic organs performed through an abdominal incision? Should sponge material be introduced into the peritoneal cavity in a moist or a dry condition? Should the pelvis be drained; if so, in what class of cases, and how? Should silk or catgut be used preferably as ligature material? How can the abdominal incision be most advantageously closed? And, finally, what dressing should be applied after the operation?

At the Eppendorf Hospital the patients are brought into the separate operating room devoted only to abdominal operations. They have been carefully shaved, and have an antiseptic dressing over the field of operation. Trendelenburg's position is employed whenever deemed practicable. Dry gauze is used as sponge material. In aseptic operations no drainage is employed. Where it is considered necessary to drain the abdominal cavity it is done with a strip of iodoform gauze.* Leopold likewise has a room set aside in which only abdominal operations are performed. The patient is placed in Trendelenburg's position, but Leopold stands on the right side of the patient and makes his incision toward the symphysis pubis. Dry gauze is used in place of sponges, and silk as ligature material. The Paquelin is used to free tubes and ovaries after they have been tied off, and to sever adhesions. Sterile gauze is used as drainage where pus has escaped into the peritoneal cavity. The abdomen is closed with a layer of silk sutures passing through the whole abdominal wall, and superficial silk sutures are introduced to adapt the skin more carefully. The dressing consists of a few layers of gauze, then cotton, and a roller bandage over all. Sänger also uses Trendelenburg's position. He moistens his freshly sterilized gauze with a sterilized soda solution before the beginning of the operation, and this he uses as sponge material. As ligature material he generally employs silk. He only drains when much pus has escaped into the peritoneal cavity, or when there is much hæmorrhage from adhesions, and then uses iodoform gauze. He closes the abdomen with a layer of silk sutures passing through the whole abdominal wall, but only including an eighth to a sixteenth of an inch of skin. A few fine silk sutures are employed to adapt the skin more accurately. The dressing consists of a few layers of iodoform gauze placed over the wound, and a large piece of adhesive plaster over all.

Zweifel operates on a Martin's table, and never employs Trendelenburg's position. He uses only dry gauze as sponge material, and says that he has not had a single case of ileus since he has stopped using moist gauze.

Mackenrodt, although he formerly worked with Martin, uses Trendelenburg's position in most of his abdominal operations. In place of sponges he uses dry gauze. He rarely uses drainage, closing both the abdomen and the vagina after doing an abdominal hysterectomy. He assured me that his mortality was, if anything, lower by not employing drainage, and that the patients naturally recovered in a much shorter space of time. Like the rest of the Berlin school, he uses catgut entirely as suture and ligature material, tying off the largest stumps with it, but, of course, using many more ligatures than would be necessary if he employed heavy silk. He uses one long catgut suture, with which he closes first the peritonæum, then the muscles, then the fascia, and lastly the skin. It does seem a little risky to depend on one catgut thread to close the whole abdominal wound. Ohlshausen and Winter use only catgut in abdominal operations. Dry gauze is employed as sponge material. Ohlshausen lays great stress on this point, and carefully mops out the pelvis with dry gauze before closing the abdomen. The abdominal cavity is rarely drained. Trendelenburg's position is constantly resorted to. The abdomen is closed with four running catgut sutures; the first one unites the peritonæum, the second one the deep fascia (the muscles are not sewed at all), the third one the superficial fascia, and the fourth one the skin. The dressing consists of a few narrow layers of gauze covered with collodion, then a few more layers of gauze, then cotton, and a bandage. The idea is to shut off the wound from the air.

Martin has a carbolic spray playing outside of the room in which he does his abdominal operations. The patient, completely stripped, lies flat on her back; the operator sits at the foot of the table and makes his incision in the median line from the neighborhood of the umbilicus toward the symphysis pubis. Martin seems to strive to reduce the time the peritoneal cavity is open as much as possible. His assistant, seated at the side of the patient, uses his right hand to prevent the intestines from leaving the abdomen. Catgut is used as ligature and suture material. To close the abdomen, a needle threaded with about two metres of catgut is handed to the operator. Beginning below, he passes it through the whole abdominal wall on both sides. Enough catgut is cut off from the end of the long suture for an ordinary abdominal suture, and Martin is already passing the same needle through the abdominal wall again, a little higher up, to serve as the second suture, and so on until he has inserted all his sutures through the whole abdominal wall. No time is lost thereby with handing needles and needle holders. Then, in a similar way, a layer of sutures is passed through the fascia, which the assistant ties as fast as Martin inserts them. Then the sutures passing through the whole abdominal wall are tied, and a few skin sutures inserted. The dressing consists of a few layers of gauze, a layer of cotton, and a roller bandage passed around the abdomen and once around each thigh. Where there have been many adhesions, he inserts a flat sponge soaked in sterilized oil into the peritoneal cavity while he is introducing his sutures.

Dührssen places his patient in Trendelenburg's position. As sponge material he uses dry sterilized gauze. For all ligature material he employs catgut. He closes the abdominal incision with a layer of interrupted silkworm-gut sutures that are passed through all the layers of the abdominal wall, and a few sutures of similar material are introduced to adapt the skin.

Munich, Padua, and London are the only other cities in which I did not see Trendelenburg's position regularly employed. In Vienna, both Chrobak and Schauta use heavy silk as ligature material. Schauta closes the abdomen with a layer of silver-wire sutures passing through the whole abdominal wall, and a superficial layer of fine silk sutures. Winckel closes the abdomen with a continuous catgut suture for the peritonæum, a discontinuous layer of silk for the muscles, likewise for the fascia, and discontinuous silkworm-gut sutures for the skin. Novaro uses catgut both as ligature and as suture material. He employs iodoform gauze for drainage. The abdomen is closed with three discontinuous layers of catgut sutures. Peter Müller generally makes his abdominal incisions one centimetre to the right or left of the median line. He closes the abdomen with a continuous suture of fine silk for the peritonæum, a layer of interrupted silk sutures passing through the muscles and fascia, and finally a continuous silk suture for the skin. Where there have been many adhesions torn, Freund drains through the abdomen, employing gauze that has been impregnated with thymol. He closes the abdomen with one layer of silver-wire sutures and a few superficial silk ones.

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* Silk is used exclusively as a ligature material, and the abdomen is closed by one layer of discontinuous silk ligatures.

Jacobs uses dry sterilized gauze in all his operations. For ligature material he employs American iron-dyed silk, which he has found to be the strongest. If much pus has got into the peritoneal cavity, or if there are many bleeding adhesions, Jacobs inserts a sterilized gauze tampon. If, after three days, there is no rise of temperature the tampon is removed, and the opening closed with secondary sutures. The abdominal incision is closed with interrupted silkworm-gut sutures in three layers: the first for the peritonæum, the second for the deep fascia, and the third for the skin and superficial fascia. This silkworm gut is sterilized in glycerin, and Jacobs has no fistulæ arising therefrom. In Paris some men use Trendelenburg's position, others do not. Dry gauze is used as sponge material. Drainage through the abdominal incision is frequently resorted to, generally according to the method of Mikulicz, iodoform or plain gauze being employed. Silk is generally used as ligature material. The abdomen is closed in various ways. Some use a single layer of catgut sutures passing through the whole abdominal wall except the skin, the latter being united by a layer of silkworm gut. Picqué closes the peritonæum with a continuous catgut suture, the muscles and fascia with discontinuous catgut sutures, and the skin with silkworm-gut sutures. Still another method consists in uniting the peritonæum with a continuous silk suture, the muscles and fascia with an interrupted silk layer, and the skin with silkworm gut. Segond uses a single layer of silver-wire sutures passing through the whole abdominal wall. One man even uses four layers of sutures—a continuous silk suture for the peritonæum, interrupted silk sutures for the muscles, a similar layer for the deep fascia, and lastly silkworm gut for the skin and fat.

In London Trendelenburg's position is not believed in. Animal sponges are generally employed, even in abdominal operations. The pelvis is frequently drained through the abdomen, gauze or glass tubes, or both, being used for that purpose. Silk is generally used as ligature material. Here, again, various methods are in vogue for closing the abdomen. One consists in a continuous chromicized catgut suture for the peritonæum, an interrupted layer of silkworm gut for the muscles and fascia, and a similar layer for the skin, which, instead of being turned outward, is often turned inward.

Cullingworth employs the following method:

1. A layer of silkworm gut passing through the whole abdominal wall.
2. A continuous catgut (mattress) suture for the deep fascia.
3. Discontinuous horsehair sutures for the skin.

Mr. Malcolm simply employs one layer of silk sutures passing through all the layers of the abdominal wall. Dr. Galabin uses a similar layer of silkworm gut. Mr. Bland Sutton uses several layers of interrupted silkworm gut, many sutures being buried. They do not seem to get fistulæ therefrom.

THE MEDICINAL PREVENTION OF DENTAL DECAY.

By GEORGE HOWE WINKLER, M. D., D. D. S.

DENTAL decay is a subject which, on first thought, would seem to be suitably assigned to the consideration and care of the dentist alone; but close study and successful treatment of this affection, extending through a period of nearly thirty years, convince me that the subject occupies a broader field and should be brought within the scope of the physician as well. The general practitioner is necessarily conversant with the diseases of humanity from the crown of the head to the soles of the feet, and is observant of the interdependence of pathological conditions in parts both adjacent and distant. This knowledge therefore renders his opinion in many cases of great value to a patient before the calling in of a specialist, and on this account I shall endeavor to show that dental caries comes largely within the category of ills of which the medical adviser should have a broad comprehension.

The researches of Professor Miller, of Berlin, of Dr. J. Leon Williams, of London, and of Dr. G. V. Black, of Jacksonville, Illinois, have demonstrated beyond any question that bacteria are present in all decay of the teeth, and their conclusion has been generally accepted that micro-organisms are the cause of dental decay. The slides exhibited recently in New York by Dr. Williams have exposed these germs in the very act of their destructive work. Bacteria, wherever they can gain a lodgment in defects of the enamel or when in diseased conditions of the mouth, can become felted or glued to the surfaces of the teeth, excrete lactic acid. This breaks down the calcium salts of the enamel, and procures for the bacteria an opportunity to burrow into the enamel tissue or cement which binds the enamel rods together, and later on into the dentinal tubuli, excreting their acid as they burrow, thus producing decay. The conclusion has therefore been reached that these little organisms are the primary cause of dental caries. I do not accept this conclusion; on the contrary, I am convinced that while bacteria are present in all dental cavities, and are the direct cause of decay in some cases, the primary cause of dental decay in a majority of instances lies in a morbid state of the system which gives into the mouth perverted secretions. Close study of the subject, careful observation of the conditions in the mouth, and, above all, successful prevention of decay by medicinal treatment, compel me to dissent from the generally accepted theory and enable me to divide the causes of dental caries into three classes. Two of these are pure dyscrasiæ, amenable to medicinal treatment. The third is a local disturbance requiring operative interference. The first class, which is the most destructive when it exists, consists of a pathological condition of the mucous glands of the mouth, more especially those situated on the gingival borders or free margins of the gums, which results in the excretion of an acrid corrosive fluid which excoriates the epithelium and corrodes the teeth, usually forming cavities around their necks. The mucous glands in a state of health secrete a clear, colorless liquid, very slightly acid, which bathes the necks and crowns of the teeth, dissolving and washing away any particles of food that may lodge about them. In the pathological condition which we are now considering this normal condition yields to the one above described, and, apart from the severe damage done to the gums and teeth, not infrequently produces serious disturbance of digestion.

The appearance of the disease exhibits usually a line of inflammation extending along the festoons of the gums and interdental spaces, more frequently conspicuous about the palatal and lingual aspects of the molars, while at times the entire gingival borders are involved. The discoloration in some cases is so slight as to require close scrutiny to detect it; at other times the diseased borders are turgid and purple in color; again, a crimson line marks the site of the affection, and in more advanced stages we have raw surfaces and phagedenic ulcerations.

The glandular excretion in some patients is clear, limpid, and sharply acid; the teeth appear clean, but present slight erosions at their necks, which are of the same color as the teeth, firm to the pressure of an instrument, but exquisitely sensitive; or the erosions may present the light-brown and sometimes the chalky white appearance of rapid acid disintegration, soft in feeling, with pits here and there along the line of decalcification, and like the first extremely sensitive. In other cases the excretion is turbid, viscid, excoriating, corrosive, and fœtid, covering the teeth with a murky or yellowish slime which no amount of cleaning can keep off, imparting a disagreeable taste to the mouth, especially on waking in the morning, and an offensive odor to the breath. Beneath this tenacious exudate the teeth are covered with extensive decays, which present edges so friable as to be readily broken down by the pressure of the finger nail. So much for the first of my classes of the causes of dental caries; it is a simple dyscrasia and yields readily to medicinal treatment. Creosote in minute dose, frequently repeated, covering a period of from one to three weeks, is a specific for this pathological condition. The terrible destruction of dental tissue by corrosive excretions from the gingival borders is at once arrested by this remedy.

The cause of the second class of dental decay is also a morbid state of the system, which renders the fluids of the mouth destructive to the teeth and propitious to the enormous multiplication of micro-organisms which by their acid excretions and their borings prove very destructive. The acid in the mouth in this class has rather more the characteristics of weak vegetable acids than the rapid corrosive action of mineral acids, such as the appearance of the first class always presents. The condition produces a vitiated state of the oral secretions, acid in reaction, and marked by an apparent lack of some deterrent element which in normal saliva and mucus prevents the propagation and activity of bacteria.

The latter, in the absence or lack of this deterrent, multiply enormously, and the acid condition of the mouth then may be attributable partly to the vitiated condition of the secretions and partly to the acid excretions of innumerable colonies of bacteria.

There are in the serum of the blood in health certain albuminous substances, pointed out by a number of eminent scientists, which have been called by Hankin "defensive proteids." These proteids have been found in the serum of the blood of different animals, at times destructive to anthrax, again attenuating to the same germs—that is, shriveling and rendering them innocuous; and still again, in other cases, antitoxic or defensive against the toxic excretions of germs; upon which theory has been based the medication in the line of antitoxic treatment for various diseases which now occupies the most earnest attention of the secular as well as the medical mind.

Owing to the presence in healthy persons of these "defensive proteids," the secretions of the mucous surfaces are believed to be charged with a sufficient amount of some deterrent substance to render them safe against the attacks of micro-organisms which might be taken into the system. Every one living in a great city like New York receives more or less frequently into the alimentary as well as respiratory tracts dust which is contaminated with various germs of disease, but these germs, coming into contact with the deterrent agent of normal mucous secretions, furnished from the defensive proteids, are either destroyed or rendered innocuous and are cast out.

If, however, a change of health occurs by which that function is held in abeyance which furnishes to our bodies the defensive proteids, and we are thus deprived of them, the germs which we take into us may inoculate us to our injury, or even to our death. The conditions which prevail in the mouth are as follows:

Bacteria are present in all mouths, healthy or diseased; they are present whether there is dental decay going on or whether there is not; at times they are in small numbers and apparently innocuous; again, they are found in numerous quantities, destroying the teeth with various degrees of rapidity, from a small number of cavities to an apparent melting away of the entire dental arch. They are in all mouths at all times, yet they are almost entirely in abeyance in some mouths while they are rampant and destructive in others. In the same mouth we find them asserting no influence at some periods of life, while at other periods we find them quite destructive. I hold that these facts are due to the character of the secretions which bathe the mouth. When we are in a state of health and our defensive proteids are in normal and protecting quantity the bacteria are able to survive only in small numbers and in favorable locations; when a change occurs, and the deterrent element in the secretions is wanting, we suffer from the destructive agency of myriads of micro-organisms.

The appearance of the mouth in this class of ætiological factors shows generally very slight inflammation, although the gums are sometimes swollen and bleed very readily. The entire mouth is bathed in acid except after some minutes of mastication whereby the alkaline saliva has overcome the acid, and the teeth are affected by decay, more or less extensive, which is characterized by a very light brown or chalky white color and by rapid progress. The treatment of the above class is not so well defined as the first, and remedies have to be chosen with some discrimination from a number which are employed. These are very simple: the salts of mercury, potassium, and calcium, charcoal, creosote, etc., are the most potent, administered in doses so small that there is no general systemic disturbance from their use; yet their action upon the diseased conditions of the mouth is so pronounced as to be nearly specific.

Working on these lines of thought and with the above-mentioned experience, I have been enabled to pursue a practice which has resulted in the prevention of dental decay to a most gratifying extent.

The third class in my division of the ætiology of dental caries constitutes that form of decay which is due not to a dyscrasia, but simply to acid-excreting bacteria which are lodged in sheltering localities about the teeth. The sulci in the crowns of molars and bicuspids, pits or defects in enamel, malformation of teeth, or a crowded condition of them, all afford lodgment for the bacteria of the mouth, and it is here only a question of time when their acid excretions will dissolve the lime salts and decay begins. The only treatment for this class is operative interference.

It seems to me, in conclusion, that the cause of decay of the teeth lies in abnormal or defective conditions. In the first two classes, in abnormal or defective conditions of the secretions of the mouth; in the third class, in abnormal or defective conditions of the teeth themselves. To say that bacteria are the cause of dental decay sounds very much to me like saying that dyspepsia is the cause of dyspepsia. The earlier years of puberty and the period of gestation are especially the periods when the ravages of decay from the first two of the above classes are most pronounced, and then it is that the mouth should be most carefully watched and intelligent medicinal treatment be invoked to preserve the teeth. Treatment of from one to three weeks, according to severity, is sufficient to bring cases under control; in the case of young persons a re-examination should be made every three or four months during the first two or three years after the condition has manifested itself, and treatment be again resorted to if needed, for it is not certain that there may not be a recurrence of the dyscrasia within this period.

Cleanliness of the teeth and mouth and, when the presence of acid prevails, the use of Phillips's milk of magnesia, especially at night on retiring, is good. It covers the teeth with an alkaline film against which the acid for hours exhausts itself. This care is a repulse of the vitiated secretions after they have been poured out into the mouth. Such medicinal treatment is a stroke aimed at the fountain head (or source) of the infection, and when skillfully delivered frees the mouth at once of its foul condition and its acid excretions.

I am fully persuaded that more than fifty per cent. of dental caries is absolutely preventable by medicines internally administered, which act specifically in the mouth; alike pleasing and imperative is the appeal to both ambition and intelligence to prevent, rather than to repair, the ravages of decay.

226 West Fifty-ninth Street.

Therapeutical Notes.

Senecio Vulgaris in the Treatment of Flatulent Dyspepsia.—The *Revue médicale*, of Quebec, mentions the opinion held by Dr. William Murrell, of London, that senecio is an excellent gastric tonic, and gives the following as his formula for its employment:

℞ Sodium bicarbonate..........	1 drachm;
Tincture of ignatia..........	40 drops;
Tincture of senecio, Syrup of bitter-orange peel, } each ..	1 fl. ounce;
Alcohol containing ten per cent. of chloroform..............	2 fl. drachms;
Water........................	6 ounces.

M. S.: A tablespoonful three times a day.

The Treatment of Aphthous Stomatitis.—Levi, of Venice (cited in the *Journal des praticiens* for July 3d), gives the following formulæ for topical application five or six times a day:

℞	Borax	4 parts;
	Tincture of myrrh	8 "
	Syrup of mulberries	60 "

M.

℞	Borax	4 parts;
	Tincture of benzoin	2 "
	Distilled water	10 "
	Syrup	20 "

M.

℞	Sodium phosphate	10 parts;
	Orange-flower water	25 "
	Honey of roses	50 "

M.

℞	Salicylic acid	2 parts;
	Alcohol	10 "
	Glycerin	20 "

In severe cases the following may be given internally:

℞	Potassium chlorate	1 part;
	Distilled water	90 parts;
	Syrup of raspberries	10 "

M. S.: A teaspoonful every two hours.

An Application for Vegetations.—The *Gazette hebdomadaire de médecine et de chirurgie* for July 11th gives the following:

℞	Distilled water	50 parts;
	Tincture of thuja	5 "
	Tincture of cicuta	1 part;
	Potassium bicarbonate	2 parts.

M.

Lycetol in the Treatment of Renal Colic.—Wettzack (*Gazette hebdomadaire de médecine et de chirurgie*, July 11, 1897) recommends this formula:

℞	Lycetol	23 grains;
	Sodium bicarbonate	8 "

M. Such a mixture to be taken twice a day, morning and afternoon, in a glass of Vittel or Contrexéville water.

Europhene in the Treatment of Burns.—The *Gazette hebdomadaire de médecine et de chirurgie* for July 11th attributes the following formula to Seibel Nolda:

℞	Europhene	1 part;
	Vaseline, } Lanolin, } each	10 parts.

M. To be applied three or four times a day to burns to the degree of rubefaction or vesication.

The Treatment of Parasitic Baldness.—Sabouraud (*Concours médical*, June 19, 1897; *Lyon médical*, July 4, 1897) recommends two ointments. The first, which is cheap, is made according to the following formula:

℞	Turpeth mineral	45 grains;
	Essence of lemon	20 drops;
	Vaseline	900 grains.

M.

The second ointment is very expensive, but, says the author, it is cheaper to regain one's hair with this pharmaceutical treasure than to buy a wig.

The formula is as follows:

℞	Pilocarpine, } Quinine, } each	4 parts;
	Precipitated sulphur	10 "
	Balsam of Peru	20 "
	Beef marrow	100 "

M.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M.D.

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THE INFLUENCE OF SEX ON THE RESULTS OF SURGICAL OPERATIONS.

In the *Progrès médical* for July 10th that well-known writer, M. Marcel Baudouin, discusses the apparent fact that women bear severe surgical operations better than men do, recovering from them in a greater proportion of instances. This, it seems, is particularly the case with regard to abdominal operations. M. Baudouin cites certain statistics furnished by Haberkaut (*Archiv für klinische. Chirurgie*, 1895–1896). As regards pylorectomy and gastro-enterostomy, Haberkaut's figures show that women bear those serious operations far better than they are borne by men. For example, of a hundred and seventeen gastro-enterostomies done on men, fifty-four per cent. proved fatal, while of ninety-six performed on women, only thirty-five per cent. were followed by death—a difference of nearly twenty per cent. In pylorectomies the difference is not so great, only twelve per cent., but, nevertheless, it is decided; of seventy operations done on men, a fraction over sixty-four per cent. proved fatal, while of a hundred and forty performed on women, not quite fifty-three per cent. ended fatally.

The causes of woman's superior resistance to the dangers of grave operations have been discussed by various writers. One of the theories is that it is a peculiar attribute of the female sex; but this, says M. Baudouin, does not explain the fact. Reasoning of this sort, he remarks, has well been likened by M. Terrier to the statement of one of Molière's characters to the effect that *l'opium endort, parce qu'il a une vertu dormitive.* Another theory is the following: Pregnancy generally induces certain changes in the abdominal walls; they become more supple, more flaccid, thinner, and more yielding. Consequently, when a woman has an intra-abdominal lesion, physical examination of the abdomen, particularly deep palpation, is enormously facilitated, and a diagnosis is made more easily and earlier than in men. Moreover, women speak of their troubles early and are readily impressed by suggestion, so that the surgeon persuades them in good time to submit to surgical intervention, even of a serious character, for it promises to preserve their charms as well as their life. Hence they are operated upon at a less advanced period of their disease, that is, under more favorable conditions, so that they oftener recover. M. Baudouin adds that ordinarily women do not work, and are therefore more willing to enter a hospital than men, who will not give up their occupation until they are disabled by the disease with which they are suffering. The theory, or rather the group of theories, thus set forth M. Baudouin is inclined to regard as covering the whole truth, but it seems to us that an additional fact should be taken into account—namely, the relatively greater capability of women to bear hæmorrhage.

FERRIPYRINE AS A HÆMOSTATIC.

The gist of three articles by O. Schäffer and of an article by F. Merkel, all published in the *Münchener medicinische Wochenschrift* within the last year and a half, is given in the *Centralblatt für Gynäkologie* for July 10th. Merkel has used ferripyrine in eighteen cases, in the form of the pure powder in two cases and in that of an eighteen-per-cent. solution in the others. One of the cases in which the powder was employed was one of uterine carcinoma for which an operation was not practicable, and the other was one of recurrence of the disease after hysterectomy. Both the fœtor and the bleeding were checked by the use of ferripyrine, but Merkel says he has had equally good results, and more enduring, with other measures. In a case of severe bleeding from a carcinoma of the cervix uteri the application of the eighteen-per-cent. solution on tampons was ineffectual. In a case of hæmorrhage of nineteen days' duration, apparently due to abortion, the application of ferripyrine on two successive days was without result, but curetting stopped the bleeding. In four other cases somewhat similar the result was the same. Nine applications of ferripyrine were made in five cases of myoma, but in every case the bleeding recurred in from fifteen to forty-five minutes. The remedy was found serviceable in one out of seven cases of chlorosis. On the whole, Merkel is not inclined to continue in the use of ferripyrine. He mentions the intense staining property of the drug as objectionable.

Schäffer, on the other hand, thinks the efficiency of ferripyrine as a hæmostatic depends on the choice of cases and on the way in which the drug is employed. Nothing but a temporary effect, he remarks, should be expected of any styptic, and cases of myoma are unsuitable for the use of styptics. He insists that ferripyrine should not merely be applied, but inserted into the uterus on tampons, and says that they should be allowed to remain in place for two hours. If gauze or wadding is used, the loose tampon formed by introducing it into the uterus should be retained for from twelve to twenty-four hours. In cases of severe hæmorrhage, especially from tumors and mucous surfaces, not much, he says, should ever be expected of a styptic.

Ferripyrine, says Schäffer, is quite as good a styptic as chloride of iron, and it may be left in the cavity of the uterus for twelve or twenty-four hours or longer without its exerting a deleterious corrosive action. In a one-to-five solution it acts powerfully to produce uterine contraction at the same time that it exerts an astringent effect on the mucous membrane. The best way of applying it is to insert it on small tampons. In the menorrhagia of endometritis the dry powder, introduced on a tampon, seems to act better than the solution, and the effect appears to be more lasting.

MINOR PARAGRAPHS.

ENGLISH-SPEAKING PHYSICIANS IN ITALY.

The *Lancet's* Rome correspondent says that recently in the Italian Chamber of Deputies Dr. Santini, promoter of a bill to exclude English-speaking medical men from practising in Italy, asked what were the intentions of the government as to an article of the *legge sanitaria* which he proposed to modify in such a sense. Signor Serena, on behalf of the government, replied that medical practitioners of non-Italian nationality would be allowed to practise among Italians in Italy if Italian medical men had the same privilege conceded them by the other nationalities in question. Signor Serena added that an article still in force allowed foreign medical men to practise among their compatriots resident in Italy if they did not extend their *clientèle* to Italians. The abuse of this privilege, he said, the government had hitherto guarded against, and would, he added, continue to guard against with increased vigilance. This, says the correspondent, did not satisfy Dr. Santini, whose object is to confine English-speaking practice in Italy to Italian practitioners, and to make it as impossible for British or American medical men to pursue their profession among compatriots in the kingdom as it is now in Switzerland and France. Manifestly, this was more than the government, represented by Signor Serena, were prepared to grant. As the *Lancet* has pointed out, the writer continues, the presence of the English-speaking colony in Italy is (to Italy) so pecuniarily important that any legislation calculated to deter or even diminish it would on Italy's part be distinctly suicidal; and the legislation sought by Dr. Santini partakes of that character.

NASCENT SILVER CHLORIDE IN THE TREATMENT OF METRITIS.

M. Boisseau du Rocher reported at a recent meeting of the Paris Société de médecine et de chirurgie pratiques (*Presse médicale*, June 30th) that he had treated twenty cases of metritis, with or without salpingitis, in M. Reynier's service in the Lariboisière, by depositing on the uterine mucous membrane a layer of silver chloride formed by electrolysis. A silver electrode was introduced into the uterine cavity and connected with the negative pole of a galvanic battery, the positive electrode, in the form of a broad plate, being applied to the abdomen. He advises weak currents, of from six to eight milliampères, applied for about ten minutes five or six times. The results are said to be very satisfactory.

A NEW CANADIAN JOURNAL.

We have received the first number of the *Revue médicale*, dated July 7th. It contains eight double-column quarto pages of reading matter. The editors announce that they will probably be obliged to defer the publication of the second number until August, but they add that after that the *Revue* will appear regularly every Wednesday. The new journal is published in Quebec. We find the contents of the initial number very valuable, and we do not doubt that the *Revue* will prove very acceptable to the French-speaking physicians of Canada and the United States, to whom it particularly appeals. The faculty of Laval University is largely represented on the editorial staff.

ONE OF THE EVILS OF INCOMPLETE COITUS.

Under the name of a cardiac neurosis of sexual origin, Kisch, of Prague (cited in the *Presse médicale* for July 10th), describes a set of symptoms that he has observed in certain nervous young women whose husbands made it a practice to withdraw just before the instant of ejaculation, leaving them overexcited and unsatisfied. The physiological tachycardia of coitus, he says, becomes particularly intense in such women and assumes the form of very distressing palpitation which at first persists for some time after each incomplete copulation, and after a while occurs during the day, repeatedly and without appreciable cause. For a time this palpitation is the only manifestation of the neurosis, but soon the clinical picture is completed by a feeling of anguish, headache, vertigo, syncope, and general weakness. The women are depressed and irritable; they weep on the slightest occasion and take a gloomy view of life. The appetite is impaired, digestion becomes difficult, and they are constipated. The pulse is small, soft, and accelerated, often intermittent and arrhythmical. The arteries, however, are supple, and auscultation of the heart discloses nothing abnormal. All these symptoms will disappear as by enchantment when the practice on which they depend is given up.

A NEW STUDY OF BURNS.

Tschmarke, formerly an assistant in a Berlin hospital, has recently reviewed the theories that have been held as to the cause of death in cases of burns (*Deutsche Zeitschrift für Chirurgie*, xliv; *Centralblatt für Chirurgie*, July 10, 1897). He considers Sonnenburg's the most probable, that of a reflex lowering of the vascular tone, with consequent cardiac paralysis; yet, he says, parenchymatous changes and degenerations in the kidneys, lungs, brain, etc., are to be taken into account. He relates a case in which numerous streptococci were found in the blood after death, and from this he argues that burns should be treated with strict regard for antisepsis. He would treat fresh burns by scrubbing the skin with soap and water and then disinfecting it with ether and a half-per-cent. solution of corrosive sublimate. Blebs should be opened and the detached epidermis removed, and then the dried surface dressed with iodoform gauze, etc. In burns of the face dusting with bismuth may be employed. For the first few days after a severe burn has been received, prolonged warm baths are dangerous, for they tend to relax the blood-vessels.

COFFEE AS A CORRIGENT OF CREOSOTE.

Kaatzer (*Therapeutische Monatshefte*, May, 1896; *Centralblatt für innere Medicin*, July 10, 1897), writing of the creosote treatment of pulmonary tuberculosis, recommends coffee as a corrective of the unpleasant taste and smell of the drug. A pint of the preparation he employs contains a little less than three drachms of creosote and nearly an ounce and a half of Richter's extract of coffee. He thinks it is better to give creosote thus diluted than in the form of pills or capsules. Not more than thirty grains of the drug should be given daily, and this is enough if its use is continued regularly. The creosote should be strictly pure, and it should be employed "as such," rather than any of its components.

INFLAMMATION OF THE VERMIFORM APPENDIX AND HYSTERIA.

Talamon (*Medécine moderne*, 1897, No. 24; *Centralblatt für Chirurgie*, July 10, 1897), in an addendum to a lecture of Rendu's, calls attention to his observations published six years ago and gives the histories of three cases since observed by him. Simple appendicular colic or parietal inflammation of the appendix, he says, may be accompanied in hysterical persons, especially women, by nervous symptoms constituting a perfect picture of severe diffuse peritonitis. In such cases an operation, although demonstrated to have been unnecessary, has a decided psychical effect usually, but not always. The lesson is that in persons with appendicular symptoms the general condition must be carefully inquired into, especially with reference to hysteria.

INFLAMMATION OF THE VULVO-VAGINAL GLAND.

Bergh (*Hospitals-Tidende; Deutsche Medizinal-Zeitung*, July 5, 1897) has made an exhaustive study of this gland. As regards palpation, he has found that in 398 out of 901 healthy individuals he could not feel either the gland or its excretory duct. Diseases of this glandular apparatus, he says, have their seat for the most part in the duct and are almost always of gonorrhœal origin, although occasionally simple catarrhal affections are met with. He mentions two cases of this sort. Next to urethritis, affections of this gland and its duct are the commonest gonorrhœal manifestations in women, certainly commoner than catarrh of the cervix uteri, which, for that matter, is not infrequently due to some other cause. In the author's hospital observations the proportion of cases of inflammation of Bartholin's gland to that of the urethra was as one to seven or eight. In 1,984 cases of disease of the gland and its duct, the right gland was alone affected in 741, the left gland only suffered in 943, and both glands were involved in 300. In the period from 1866 to 1894 an abscess formed in more than twenty-one per cent. of the cases observed, but during the last nine years in only a little over fifteen per cent. The pus was offensive in forty-one per cent. of the abscesses occurring in public prostitutes, and in almost forty-five per cent. and a half of those observed in clandestine prostitutes. The inguinal glands are not usually swollen in cases of disease of the vulvo-vaginal gland.

THE TREATMENT OF TYPHOID FEVER.

APROPOS of Dr. Cutler's excellent article on this subject, which we published a few weeks ago, we would particularly commend to our readers the report, given in this issue of the *Journal,* of the discussion to which the paper gave rise at a meeting of the Society of Alumni of Bellevue Hospital. There are few subjects, if any, in which the general practitioner takes a livelier interest than that of the treatment of a disease so important and so prevalent as typhoid fever. It is not enough for him to read what some remote theorists or experimenters have published; he wishes to know what the experienced physicians of his own country really do in their management of the disease—such well-known clinicians as Dr. A. A. Smith, Dr. Egbert le Fevre, Dr. Floyd M. Crandall, Dr. William H. Katzenbach, and Dr. Condict W. Cutler. This he will find amply set forth in the report alluded to.

KOCH'S NEW TUBERCULIN.

AN esteemed Chicago correspondent writes to us as follows: "The results of the experience of L. von Nencky, Maczewski, and Logucki with this newest discovery of Koch's, published in the *Presse médicale,* No. 46, do not throw a very favorable light on the purity of the preparation, which, as such, in the opinion of Koch, can not be improved upon. The method of preparation, as lately published by Koch, gave reason to suspect that during the process a contamination with other bacteria might occur. Nencki injected a tuberculous patient with the tuberculin and observed after every injection a decided general reaction with chills and fever. On examination, he found that the tuberculin contained numerous pneumococci, staphylococci, and streptococci, which grew well on nutrient media, thus showing evidence of undisturbed vitality. The same result was obtained from two other phials, which were opened aseptically. The authors believe that such contamination of the tuberculin is able to produce consequences disagreeable for the patients treated, and think it necessary that the manufacturers should furnish the public with a sufficient guarantee of the absolute purity of the tuberculin by reliable tests of their products."

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 27, 1897:

DISEASES.	Week ending July 20.		Week ending July 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	6	16	5
Scarlet fever	108	5	65	6
Cerebro-spinal meningitis	0	1	2	0
Measles	173	8	149	3
Diphtheria	173	23	175	27
Croup	9	3	3	4
Tuberculosis	161	116	129	89

Bellevue Hospital Medical College.—Dr. Janeway has been elected president of the faculty. The following is the organization of the department of medicine: E. G. Janeway, M. D., professor of medicine; A. A. Smith, M. D., LL. D., professor of principles and practice of medicine and clinical medicine; H. M. Biggs, M. D., professor of therapeutics and clinical medicine and adjunct professor of principles and practice of medicine.

The Treatment of Tuberculosis with Antitoxic Serum.—Dr. E. A. de Schweinitz writes to us to correct a statement made in his and Dr. Dorset's article published in our last issue. Instead of "Dr. Trudeau, who has used some of the serum for a short time only, records a reduction of a high temperature in one case" (page 110, first column), the statement should have been: *Dr. Trudeau noted in one case a reduction of temperature which may have been due to this serum.*

A New Pædiatric Book.—The Medical Gazette Publishing Co., of Cleveland, announces a book entitled *About Children,* by Dr. Samuel W. Kelley, professor of diseases of children in the Cleveland College of Physicians and Surgeons, to be issued in September. We learn that Dr. Kelley's course of six lectures in the Cleveland General Hospital training school met with such marked approval that it was decided to publish them in book form.

The National Academy of Medicine of Peru.—Dr. Charles A. L. Reed, of Cincinnati, has been elected a corresponding member.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, plague, and leprosy were received in the office of the supervising surgeon-general during the week ending July, 24, 1897:

Small-pox—United States.

Toledo, Ohio	June 1–31		1 death.
Brooklyn, N. Y.	July 10–17	1 case.	
Memphis, Tenn.	July 10–17	1 "	
New York, N. Y.	July 10–17		1 "
Pensacola, Fla.	July 3–10	1 case of varioloid.	

Small-pox—Foreign.

Calcutta, India	May 29–June 5		2 deaths.
Glasgow, Scotland	June 26–July 3	1 case.	
Hong Kong, China	May 25–June 12		1 death.
Madras, India	May 29–June 11		5 deaths.
Madrid, Spain	June 23–30		3 "
Manaos, Brazil	June 12–26	103 cases,	12 "
Sagua la Grande, Cuba	July 3–10	124 "	4 "
Moscow, Russia	June 19–26	1 case,	1 death.
Nagasaki, Japan	June 15–22	8 cases,	1 "
Odessa, Russia	June 26–July 3	2 "	
St. Petersburg, Russia	July 3–10	10 "	3 deaths.
Warsaw, Russia	June 26–July 3		1 death.

Cholera.

Bombay, India	June 8–22		12 deaths.
Calcutta, India	May 29–June 5		29 "
Madras, India	June 5–11		2 "

Yellow Fever.

Habana, Cuba	July 8–15		40 deaths.
Panama, Col	June 23–July 3	12 cases,	7 "
Cardenas, Cuba	July 3–10	3 "	
Cienfuegos, Cuba	July 4–11		6 "
Sagua la Grande, Cuba	July 3–10	40 "	3 "

Plague.

Formosa, Japan	June 9–27	91 cases.	
Bombay, India	June 8–22		45 deaths.

Leprosy.

Jersey City, N. J.	July 18		1 death.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 18 to July 24, 1897:*

BALL, ROBERT R., Captain and Assistant Surgeon. The extension of leave of absence granted him is extended until October 15, 1897.

McCreery, George, Captain and Assistant Surgeon, is relieved from duty as attending surgeon and examiner of recruits at Boston, and ordered to report for temporary duty at the Soldiers' Home, near Washington, D. C., relieving Gandy, Charles M., Captain and Assistant Surgeon.

Gandy, Charles M., Captain and Assistant Surgeon, is granted leave of absence for two months and ten days, to take effect upon being relieved from temporary duty at the Soldiers' Home, near Washington, D. C., and ordered to report for duty at Fort Mason, California, upon the expiration of leave of absence.

Shannon, William C., Major and Surgeon. The leave of absence granted him on surgeon's certificate of disability is extended three months on surgeon's certificate of disability.

Stiles, Henry R., First Lieutenant and Assistant Surgeon. So much of the order as directs him to report for duty is amended, so as to direct him to report for duty at Fort Preble, Maine, relieving Harris, Henry S. T., Captain and Assistant Surgeon.

So much of paragraph 16, S. O., 162, A. G. O., July 16, 1897, as relates to the officers hereinafter named is amended to read as follows:

Keefer, Frank R., Captain and Assistant Surgeon, is relieved from duty at Washington Barracks, D. C., to take effect upon the expiration of his present leave of absence, and ordered to Fort Walla Walla, Washington, for duty.

Crosby, William D., Captain and Assistant Surgeon, upon being relieved from duty at Fort Missoula, Montana, is ordered to Fort Sam Houston, Texas, for duty.

Stark, Alexander H., First Lieutenant and Surgeon, is ordered to Washington Barracks, D. C., for duty upon the arrival of Crosby, William D., Captain and Assistant Surgeon.

Harris, Henry S. T., Captain and Assistant Surgeon, upon being relieved from duty at Fort Preble, Maine, by Stiles, Henry R., First Lieutenant and Assistant Surgeon, is ordered to Fort Washakie, Wyoming, for duty, relieving Clarke, Joseph T., Captain and Assistant Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending July 24, 1897:*

Spratling, L. W., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, and ordered to the Naval Hospital, Philadelphia.

Kennedy, R. M., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Naval Hospital, Norfolk.

Pryor, J. C., Assistant Surgeon. Detached from the Naval Laboratory, New York, and ordered to the Naval Hospital, Mare Island, California.

Wheeler, W. M., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, and ordered to the Oregon.

Farenholt, A., Assistant Surgeon. Detached from the Oregon, to proceed with insane patient to Washington, and ordered to the Vermont.

Riggs, C. E., Assistant Surgeon. Detached from the Vermont and ordered to the New York Navy Yard.

Price, A. F., Medical Inspector. Detached from the New York Navy Yard and ordered to the Olympia as fleet surgeon.

Hawke, J. A., Medical Inspector. Ordered to the New York Navy Yard.

Ayers, J. G., Medical Inspector. Detached from the Olympia as fleet surgeon, ordered home, and granted two months' leave.

Ames, H. E., Surgeon. Detached from the Cincinnati and ordered to the Naval Hospital, Yokohama, by steamer, August 14th.

Byrnes, J. C., Surgeon. Detached from the Norfolk Navy Yard and ordered to the Cincinnati.

Fitzsimons, P., Surgeon. Detached from the Naval Hospital, Yokohama, on relief, ordered home, and placed on waiting orders.

Births, Marriages, and Deaths.

Died.

Crane.—In Holland Patent, N. Y., on Thursday, July 22d, Dr. Delos A. Crane, aged seventy-six years.

Kiefer.—In New York, on Friday, July 23d, Dr. Louis F. Kiefer, aged forty-five years.

McNaughton.—In Watervliet, N. Y., on Thursday, July 22d, Dr. William McNaughton, in the thirty-fourth year of his age.

Thurman.—In New York, on Wednesday, July 21st, Dr. William Thurman, in the fifty-sixth year of his age.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of March 3, 1897.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

Epithelioma of the Tonsil, Pharynx, and Tongue. Operation. Recovery.—Dr. Fred Walker Gwyer presented a case of this kind. The patient, a painter, fifty-two years of age, had been referred to him by Dr. C. G. Coakley, to whom the case had been sent by Dr. C. H. Ludlum, of Hempstead, Long Island. At the time of his first visit to Dr. Coakley, October 7, 1896, he had been suffering some pain in the throat, mostly on the left side, with occasional slight pain in the region of the left ear, and some difficulty in swallowing. He had been perfectly well up to six weeks prior to this visit, and the dysphagia had only lasted three weeks. Previous to this illness, the patient had always been in good health. An uncle had recently died of cancer.

Examination had shown the patient to be fairly well nourished, and to have very slight cachexia. Inspection of the mouth had revealed a large, bright red, cauliflowerlike mass occupying the side of the left tonsil, and invading both the anterior and posterior pillars of the fauces. The growth had also invaded the lower border and anterior surface of the velum, extending about halfway to the median line. The left half of the tongue, in the region of the circumvallate papillæ, had a similar growth, covering an area of about an inch anteroposteriorly and three eighths of an inch wide. The growth had been so large that it had been impossible to get a mirror in the back of the throat to see how far down the growth extended. Digital examination, however, had shown the epiglottis and the structures at the upper part of the larynx on the left side apparently free from any infiltration. On the left side, below the angle of the jaw, one or two enlarged lymphatic glands had been felt. The diagnosis of epithelioma had been made. From the lines of extension, and the amount of tissue involved, it had seemed likely that the growth had originated in the tonsil.

Dr. Gwyer said that he had operated on the patient on October 14, 1896, an incision being made under the left side of the jaw from the symphysis to a point a little posterior to the angle. The lingual and facial arteries had been found and tied, the submaxillary gland, and two or three lymphatic glands which were enlarged, had been removed, and the floor of the mouth opened into. Finding that there would be insufficient room for the work in hand, even were the tongue removed, the incision had been prolonged anteriorly from the symphysis upward through the lower lip, and, after drawing the lower left middle incisor tooth, the jaw had been sawed through just to the left of the median line. On dropping the jaw, no difficulty had been experienced in drawing the left half outward and upward, so that it lay at a right angle to the normal position and gave a full view of the left side of the mouth and pharynx, even to the epiglottis, and plenty of working room. The left half of the tongue from tip to base had then been easily removed, and with little hæmorrhage. Beginning anteriorly, the left pharyngeal wall had been removed, including the pillars of the fauces and the tonsil; in doing this, the dissection by scissors had been carried to the basement fascia separating the pharyngeal membrane and muscles from the external parts. A good portion of the left posterior wall had next been removed, together with all of the left velum. Examination had revealed no further sign of the growth, and the operation had been thought to be radical.

The tip of the tongue had been brought around and stitched to the base, doubling the tongue laterally upon itself, a couple of sutures above and below closing that wound. His idea in doing this had been that just so much raw surface would be closed in, and that the anterior muscle fibres, by acting upon the base of the tongue, would facilitate deglutition. Some portion of the mucous membrane had been sutured with catgut, the jaw drilled and fixed in place by silver wire, and the outer wound closed with silk. The dressing had consisted of strips of iodoform gauze, about an inch wide, pasted on with iodoform collodion, and over this a gauze-and-cotton dressing, which had been removed the next day. The patient had done remarkably well constitutionally. Although the operation had lasted over two hours, a large surface had been exposed, and anæsthesia (at first ether, then chloroform) had been difficult, there had been no shock or subsequent rise of temperature. The diet for the next several days had been milk, and some difficulty had been experienced in keeping the mouth clean. The outside wound had healed promptly except near the angle of the jaw, where there had been some suppuration, owing, no doubt, to infection through the mouth. This had healed in a couple of weeks. The interior wound had granulated and healed in about six weeks. Owing to the difficulty in keeping the mouth clean, already mentioned, suppuration had occurred at the point of division of the jaw, and the wire sutures had worked loose and failed to hold the jaw fixed. About six weeks after operation the patient had been sent to the New York Dental School, and had there been fitted with a very satisfactory interdental splint, after which there had been no further trouble. Three months after operation the patient had been examined, and the jaw found to be firmly united, and no return of the growth. About three weeks ago he had again presented himself with a suspicious enlargement under the left side of the jaw. This had been traced to a furuncle lower on the throat on the same side. At present, he was inclined to think it very suspicious and should remove it as soon as possible.

The patient talked fairly well, and ate and swallowed well. A few days ago Dr. Coakley had examined the patient with him, and had failed to find any return of the growth.

The speaker called special attention to the following points: The comparatively slight scar; the even line of union of the bone; the use the patient had of the remaining tongue; the smooth appearance and feel of the left pharynx; the very slight hæmorrhage that occurred; the large field for operation made by division of the jaw; and the consequent thorough and easy removal of the lateral pharyngeal wall.

The pathologist's report, by Dr. E. P. Shelby, of the Loomis Laboratory, was as follows: "The tonsil shows marked epithelial invasion. In places there is a distinct fibrous stroma, which surrounds masses of epithelial cells. In the tongue there is a downgrowth of epithelium, which extends into the muscles and other deep structures. Round-cell infiltration is present in places, and here and there epithelial 'nests' are seen. The growth is unquestionably an epithelioma."

Dr. J. F. Erdmann said that the result in such cases was often good after operation. He recalled a case of epithelioma of the jaw, involving about an inch of the pharyngeal wall, in which he had excised the left half of the inferior maxilla, a portion of the pharynx, and the floor of the mouth on that side. The wound had healed by granulation, and had secondarily recurred after eighteen months. Within the last ten days he had seen a case of carcinoma involving the mucous membrane on the left side, with involvement of the sublingual and submaxillary glands and the side of the pharynx. The primary operation had been done on February 22d, the involved glands, the sheath of the carotid and of the internal jugular had been dissected out, and half an inch of the pneumogastric nerve removed between the superior and inferior laryngeal branches; also three inches and a half of the internal jugular vein. The nerve had not been involved in the growth, but there had been considerable pressure upon it, and the nerve had been accidentally ligated and cut. The divided ends had been united by sutures. There had been no effect upon the heart, but at the present time the patient had a decidedly brassy voice.

Dr. Gwyer said that after the removal of the glands he had found that there was no hope of reaching the pharyngeal wall by the original incision, so the incision had been prolonged.

Enterectomy followed by Circular Enterorrhaphy by Maunsell's Method.—Dr. Frederick Holme Wiggin reported a case of this kind. A woman, sixty-six years of age, who had been an alcoholic for many years, had been admitted to the gynæcological ward of the City Hospital on December 28, 1896. She said that a laparotomy had been performed upon her two years prior to admission, and that she had been obliged to work hard afterward. About six months prior to admission to the hospital she had received several severe blows on the abdomen, after which there had been noticed a protrusion of the abdominal wall in the umbilical region. She stated that recently she had been knocked down and tramped upon by a horse, and that this had been followed by the formation of an abscess in the wall of the abdominal protrusion, by sloughing of the skin covering the protrusion and by the formation of an ulcer about two inches in diameter. Soon after her admission, while she was being bathed, the tissues forming the base of the ulcer had given way and allowed the escape of the intestine from the peritoneal cavity. Through some misunderstanding the condition had not been reported to the house surgeon for several hours. When he had first seen the case, several coils of ileum had been outside of the abdominal wall and among the bedclothes, and the edges of the opening in the abdominal wall had been gangrenous. The protruding gut had been dark, inflamed and thickened, and held together by strong adhesions. As the gut had been evidently constricted tightly, and also infected, preparations had immediately been made for excision. After the opening in the abdominal wall had been enlarged by cutting off its gangrenous edges, about two feet of the bowel had been removed. The divided ends had been united by the Maunsell method. After the invagination had been reduced, it had been found necessary to further approximate the peritoneal coats by several Lembert's sutures. After the abdominal cavity had been thoroughly flushed with a very weak solution of hydrogen dioxide—all that had then been available—the gut had been returned into the peritoneal cavity, and the latter freely flushed with saline solution. Some of this solution had been allowed to remain in the cavity. The walls of the abdominal wound had been next approximated by a single row of silkworm-gut sutures. The case had progressed favorably for about forty-eight hours, when persistent nausea and vomiting had set in, and the belly had become tympanitic. Various cathartics had been administered, but without avail. On the morning of the fourth day a small quantity of gas had passed by rectum, but the vomiting had persisted. As the abdomen was then much distended, it had been thought best to reopen the incision and ascertain whether or not there was any obstruction. On opening the wound the distended bowel had escaped, and it had become necessary to puncture the bowel in order to relieve some of the flatulent distention. It had been found that the peritonæum had become generally inflamed, and that the bowel was flexed just below the point of anastomosis and was adherent, inclosing a small abscess in the mesentery. This abscess had contained about a drachm of pus. It had been removed and the infected area disinfected with a solution of hydrozone. This portion of gut had been isolated by means of iodoform gauze strips, the ends of which had been brought out through the abdominal wound. The patient had not rallied, and had died a few hours later. His main object in reporting the case was to show, by the specimen presented, how perfectly the bowel could regenerate in four days after enterorrhaphy.

The President said that this case showed how difficult it was to determine at the operation the true condition of the gut. He had only done four intestinal resections by this method of Maunsell's, but in one, a case of carcinoma of the sigmoid flexure, the proximal end of the gut, although apparently viable, had been soft, and the patient had died a week after the operation, apparently from an auto-toxæmia. A second fatal case had occurred after a resection, made wide of the gangrenous area, in a peculiar hernia case. The intestinal wound had become infected, and the patient had died in about three days. In that case there had been intestinal paresis and toxæmia.

Dr. Wiggin said that in the case he had just reported the patient had been in bad condition, and the edges of the opening had been gangrenous. From his experience with this method of anastomosis he did not think that it was more likely to be followed by prolonged intestinal paresis than when other means were employed. In another case there had also been persistent vomiting, but the repeated administration of small quantities of salines had finally proved successful. In view of the evident strength of the union in the anastomosis just exhibited, he would not be afraid in the future to give salines, either by mouth or by enema. It was certainly exceedingly difficult to determine at the time of operation whether or not the bowel was in such a condition as to retain its vitality if allowed to remain.

Malignant Papillary Dermatitis.—Dr. Wiggin reported a case of this kind. (To be published.)

Dr. J. A. Fordyce presented the pathological report on the specimen. (To be published.)

Dr. Erdmann asked if there had been any axillary involvement in these cases.

Dr. Wiggin replied that in this case several enlarged axillary glands had been found, but no minute examination had been made of them. Some years ago he had presented a report of another case of this disease, in which the operation had been done in 1890, and there had been no recurrence since then. Dr. Dunham had examined that breast, and had found evidence of fibrous change, but none of carcinoma. The disease had, however, only existed about two years.

Perforative Ulcer of the Duodenum, with General Suppurative Peritonitis, mistaken for Perforative Appendicitis.—Dr. Irving S. Haynes reported such a case. The patient, a sailor, twenty-two years of age, had been admitted to the Harlem Hospital January 15, 1897. He had never had typhoid fever, but had contracted syphilis about five years before. He stated that he had suffered for eighteen months previously with severe attacks of pain in the right umbilical region, which would subside spontaneously after a day or so. Five days previous to his admission he had had such an attack. The three following days he had been under the influence of alcohol. On January 14th, at 4 p. m., while still intoxicated, he had been seized with a severe attack of pain in the region of the umbilicus, radiating to both sides, especially toward the right iliac region. This had continued with increasing severity. A physician who had been called in on the following day had diagnosticated perforative appendicitis, and the man had been brought into the hospital the same day at 3 p. m. His temperature was 103.8°; pulse, 126; respirations, 40; he had an anxious expression; the abdomen had been swollen and tender, especially on the right side; thighs flexed. At 8 p. m., under ether, the usual incision for appendicitis had been made, and had given vent to yellow flocculent serum. The colon and ileum had been dark, reddish-brown in color, showing intense congestion, and covered with thin whitish patches of the general adhesive peritonitis. The appendix had proved to be only slightly congested on exposing it; had been bent upon itself, but not constricted. The ascending colon and ileum had been examined through the incision, but nothing had been found to account for the peritonitis. On opening the abdomen in the median line above the umbilicus for four inches, the same condition of peritonæum and intestines had been found, and the latter had been greatly distended with gas. The stomach, transverse colon, and the small intestine had been examined through the incision without a cause for the condition being found. Gall bladder and lower surface of liver also had been examined. The peritoneal cavity had been irrigated with hot saline solution, iodoform-gauze wicks had been introduced into the abdominal cavity, the wounds partially closed, and the patient hurried to bed. During the operation the pulse had been 195. The patient had regained consciousness after the operation; temperature had fallen to 99°, pulse to 160. He had died at 2.30 the next morning.

The autopsy had shown a small circular hole through the posterior wall of the duodenum, half an inch beyond the pyloric valve. The ulcer had been about an eighth of an inch in diameter. The abdominal cavity had been filled with a yellowish fluid and fibrin flakes, and the viscera and peritonæum had been intensely congested.

The speaker said that in the *American Yearbook of Medicine and Surgery* for 1896 two cases of perforating duodenal ulcer were cited from Marmaduke Shield, in which cœliotomy had been performed for supposed perforative appendicitis.

Two other recorded cases were referred to to show the great difficulty in making a correct diagnosis. His conclusions were: (1) That in perforative peritonitis we were not sure that the duodenum was the seat of lesion unless it was distinctly made out that the beginning of the pain was in the epigastrium or right hypochondrium, or that epigastric symptoms, such as pain and vomiting, had preceded the peritonitis. (2) That in view of the frequency of duodenal ulceration in males, the possibility of its presence should always be borne in mind when a surgeon was called to a case of perforative peritonitis in a man. (3) That the non-feculent and occasionally acid nature of the extruded fluids and gas might serve as a valuable diagnostic aid, and that the incision should be small, an exploratory effort only, until this vital point was made clear. (4) In severe shock the surgeon should wait a few hours before operating, and when he operated he should wash the peritoneal cavity thoroughly with warm water and insert a tube into Douglas's pouch.

An Operating Chair Designed for Use in Bellevue Hospital.—Dr. Robert MacLean Taft, in presenting the chair, said that it had been designed chiefly for the purpose of facilitating the work of the dressers in the office of the hospital, but the chair would also be found of service in the office of the physician. It was made of metal, finished in white enamel, and could therefore be easily kept thoroughly clean. The arm pieces consisted of two metallic plates, with a groove between them for carrying off the fluids into a receptable suspended underneath. Similar provision was made for collecting the discharges while dressing wounds about the head and face. The chair could be easily converted into an operating table, capable of assuming at the pleasure of the operator the horizontal or the Trendelenburg position, and there was a simple but strong mechanism for raising, lowering, and revolving the chair.

The Treatment of Typhoid Fever.—Dr. Condict W. Cutler read a paper with this title. (See vol. lxv, page 799.)

Dr. A. A. Smith said that the paper had been to him very suggestive. He was inclined to believe that the results in any one hundred cases of typhoid fever would hardly justify any positive conclusions as to the rate of mortality. In different seasons and under different conditions typhoid fever became a very different disease from what it was in others. As to the main feature of the paper—the continued and systematic use of morphine throughout the disease—he would say that while he had never used morphine in this systematic way, he had long felt that the opiates were not as objectionable as many observers were inclined to believe. He had been in the habit of using one form or other of opium for a long time for the relief of the marked restlessness, severe headache, and muscular pains, and certainly, up to the time of the discovery of the synthetic coal-tar preparations, it had been a very great favorite with him. When he had first used the latter preparations he had been much pleased with them, but he had had his scare very early. He had followed the German suggestion of giving thirty grains of antipyrine, repeated twice at intervals of two hours. The patients had recovered, but he thought through no act of his. After that he had declined to give these antipyretics up to a very few years ago. Latterly, however, during the first week of typhoid fever he had given small doses of these agents, and had found them very satisfactory. He had been in the habit of combining the antipyretics with small doses of opium. He did not give them after the eighth day, for the reason that he had a fear, which seemed to be a well-grounded one, that these remedies were depressing. He gave them, not for the reduction of temperature, but for the relief of certain very unpleasant symptoms. His fears regarding their very depressing effects had been removed.

He had also been interested in the remarks made by the reader of the paper regarding intestinal hæmorrhage. Like many others he had used the various astringents, but he had long ago given them up; he relied now almost exclusively upon morphine for intestinal hæmorrhage. He was opposed to the application of an ice-bag or cold coil to the abdomen in cases of intestinal hæmorrhage, and he thought he had seen intestinal hæmorrhage recur as a result of the application of cold, although, of course, such a statement did not admit of proof. He gave morphine in moderate doses by hypodermic injection.

Another interesting point in connection with the treatment of typhoid fever was that of the abortion of the disease. Probably we were all trying to do this, yet he did not believe that there was any evidence whatever that by any method of treatment typhoid fever was capable of being aborted. We all saw cases of typhoid fever which ran a short course. He hoped that we might in the future have a serum treatment which would accomplish something in this direction.

The reader of the paper had accepted the statement that many cases of typhoid fever would do very well if not meddled with, and to this he heartily agreed—there was far too much meddlesome treatment of this disease. In hospital practice one saw many patients who had had no treatment—not even dietetic—for the first two weeks of the disease, and which did very well. Usually within forty-eight hours after admission the high temperature would subside, and the subsequent course of the disease would be very satisfactory. Two or three years ago he had seen a patient who had lain out on a lumber pile for two nights in his delirium, and who had walked into the hospital suffering from typhoid fever. So far as could be ascertained he had been in the second week of the disease, yet he had made an excellent recovery.

Regarding the question of what the temperature should be before the application of baths, Dr. Smith said that there had been a too arbitrary standard established. In some of the hospitals it was the routine treatment to bathe the patient regularly if the temperature were above 103° or 103.5° F. This should be a matter to be decided upon in the individual case, the physician being guided by the condition of the nervous system, the skin, and the circulatory system. In hospital practice it was comparatively easy to have the patients bathed, but we could not be so arbitrary in private practice. He had tried in private practice nearly all of the methods of bathing, yet he had felt that oftentimes he would have succeeded fully as well if he had used only the more simple methods of bathing, instead of giving tub baths. Up to three years ago he had followed in the hospital the plan of immersion and frictions, according to the Brand method. In the past three years, under the belief that the method was too difficult for general adoption in private practice, he had adopted the "bed bath." Certainly, the results in these three years had been fully as good as in the preceding three years. The treatment was much more easily carried out, and with very much less expense. He had seen very good results from the application of sheets dipped in water, and from pieces of ice passed over the patient. The greatest danger was not from the high temperature, but from the depression of nerve force, and hence, whatever agents would sustain that nerve force through a certain period would add to the favorable progress of the disease. In private practice one often met with strenuous objections to the bath treatment. It was then necessary to resort to such measures as the use of the ice-cap or coil. According to his experience, it was not the patient, but the friends of the patient, that gave the physician the most care and concern in their therapeutic efforts.

Dr. Egbert le Fevre said that we should consider the nature of typhoid fever. When first called, the case was usually well advanced; hence, any treatment directed to the abortion of the disease would appear to be entirely useless. Looking over the pathological findings in cases of typhoid fever one must be struck with the fact that the disease was one of two weeks' duration. After the incubation, there were involvement of the glands and enlargement of the spleen, followed by a general intoxication. In many cases the disease ran a two weeks' course and recovery took place. Most of the cases, however, were more protracted, and then there was developed a septic temperature. This was apparently the result of the typhoid infection, and was not part and parcel of the disease itself. In two weeks the system usually overcame the disease, and left a condition similar to that found in the lung after the crisis of a pneumonia. Our treatment during the first two weeks was, therefore, all important, as tending to limit the amount of cell infiltration, and so reduce the liability to accidents in the third and fourth weeks. For these reasons he favored the so-called eliminative treatment at the beginning, by the use of small doses of calomel. This should be adopted in all suspected cases. From some observations that he had made with the stomach tube he had come to believe that we often gave too much for the digestive power of the patient. In most cases the mineral acid was deficient, and hence he now made it a rule to administer from five to ten drops, every four hours, of dilute hydrochloric acid, as an aid to digestion. Lack of attention to this point was often the cause of the intestinal fermentation and tympanites. It seemed to him very important also to insist upon the administration of large quantities of water. Examination of the urine would show the necessity for this form of eliminative treatment. He directed that the patient should receive at least eighty ounces of fluid, but preferred that even a larger quantity should be taken daily. He felt sure that this alone brought about a reduction in temperature and a favorable modification of all the symptoms.

It had been his custom to withhold stimulants, particularly whisky, until the later stages of the disease. When the nervous system flagged he used strychnine, rather than the diffusible stimulants. He would indorse all that had been said by the last speaker about the bath treatment. We had been unduly scared by high temperatures, and the extreme bath treatment tended rather to exhaust than to support the patient. He had not used the opium treatment, and was not inclined to look upon it favorably, for the reason that it must tend to confine the bowels and retard elimination.

Dr. Floyd M. Crandall said that he agreed very thoroughly with the reader of the paper regarding the advisability of using a simple method of treatment. He found that high temperature bothered him much less now than formerly. He was at present treating a case of typhoid fever that had reached the twenty-sixth day, and the temperature chart indicated a fairly severe form of the disease; but there had been no complications, and he had made no effort to reduce the temperature. Since the tenth day the patient had only received strychnine. He also avoided the early use of stimulants. It seemed to him that one of the chief results of the Brand method of treatment in private practice was to send these patients to the homœopaths. He had almost entirely abandoned the intestinal antiseptic treatment, for he did not believe we possessed any safe and efficient intestinal antiseptics. He now used moderate doses of the coal-tar products in the first week of the disease for the relief of pain and restlessness, but not in antipyretic doses. He believed that this practice was safe as well as satisfactory.

Dr. W. H. Katzenbach said that the early diagnosis of typhoid fever was of much importance. The disease began in a number of different ways. One variety was ushered in with cerebro-spinal symptoms, and with considerable delirium. Here we were justified in using the opiates, or the coal-tar antipyretics, or the two combined. He was opposed to the use of internal antipyretics after the first week. Typhoid fever often began as an acute disease, and we were compelled to make a careful differential diagnosis. We sometimes found chill, fever, and sweating, and enlargement of the spleen, thus leading to the suspicion of paludal fever. The disposition of physicians at the present time seemed to be in all the acute infectious diseases to give an initial dose of calomel, and this treatment seemed to be a very rational one, as it removed whatever toxines or ptomaines happened to be present in the intestinal canal. The prognosis in typhoid fever depended very largely upon absolute quiet and good nursing, given to the patient in the first week. The sick room should be large and sunny; it was also desirable to have two beds, so that the patient could be easily changed from one to the other. The friends should be kept out of the way, and letters and family matters should be kept from the patient, so as not to unduly excite the nervous system. These small details were of importance, and if attended to would often make it unnecessary to use opiates. It had not been his practice to use opiates, as a rule, but when it had seemed necessary he had preferred codeine. He was accustomed to sterilize or scald the milk, and to dilute it with plain water or Vichy water. The free administration of water was also useful. He had ordinarily used the pack, or had sponged the patient with water at 70° or 80° F. for the reduction of temperature. After the sponging the patient should be thoroughly rubbed. During the sponging, it should be remembered, the patient should be exposed, and not sponged, as nurses were prone to do, under the bed clothing. Unless the patient was stripped and thoroughly exposed to the air such sponging was practically useless. Often after the sponging the patient complained of cold hands and feet, and then it was well to apply hot-water bags to the extremities, and administer alcohol or nitroglycerin to improve the circulation.

Dr. CUTLER said that he also approved of the administration of large quantities of water. It was his practice to give whisky very thoroughly diluted, but he preferred to give it early in the disease in small quantities, and to increase it as the system seemed to demand. His reason for doing this was to anticipate the exhaustion consequent upon such a long sickness. The alcohol seemed to him to lessen tissue change and aid digestion. He had given strychnine in many cases, but not so much lately. He thought it had a tendency to increase the delirium, or the headache and pain, of which these patients often complained.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of April 7, 1897.

The President, Dr. BROOKS H. WELLS, in the Chair.

(*Concluded from page 29.*)

The Use of the Iodoform Treatment for Bubo in Other Affections.—Dr. WALKER, in a paper on this subject, said he had been led to try this procedure during the summer of 1896 while having under his care a number of children suffering with glandular affections of the neck. The old method of wide incision with antiseptic washing, drainage, and dressing had proved slow, painful, and disagreeable. Seeking to remedy these defects, he had made use of Dr. Otis's method of treating buboes, although at first with fear of iodoform poisoning. The points of the treatment, Dr. Walker stated, were aseptic preparation of the skin about the point inflamed, careful asepsis of the hands and instruments, a small incision, expression of all pus, washing of the cavity with some antiseptic solution, in his own cases usually bichloride of mercury, 1 to 4,000, followed promptly by filling the cavity with warm iodoform ointment (ten per cent. in vaseline) to slight distention; the part was finally protected by cotton compresses wet with cold bichloride solution, care being taken not to apply them too tightly, as this would squeeze the ointment from the cavity. He left the dressings in place from two to four days. He reported six cases—three of adenitis of the neck, one of gluteal abscess following typhoid fever, one of mastitis, and one of traumatic cellulitis of the leg. The uniform result in all the cases had been complete healing in from four to six days, with a very small scar. On an average only two dressings had been needed. Dr. Walker said that the following five points of advantage might clearly be made for this method of treatment: 1. Its simplicity. 2. Its easy application. 3. The avoidance of troublesome redressings. 4. The small incision required and the small resulting scar. 5. The rapidity of the healing process.

The author gave the warning that in abscesses containing necrosed bone or any other foreign substance this process would not work, and he added that one author, Willard, out of twenty-one cases, had reported four with symptoms of iodoform poisoning. But Dr. Walker had seen none whatever in his own experience.

Dr. BRIDGES said he had tried the treatment in two or three cases, and found it fairly satisfactory. The first case that he had treated in this way he had not been able to follow until the patient finally recovered. He made two injections, and the last time he saw the patient he was doing well, but another abscess broke out around the old one, and he went to the hospital for that. The speaker did not know what the result was. As to washing the cavities out with a solution, he did not do that very much, and he did not know how much was gained by it. He thought surgeons at the present time were using less water in irrigation for open wounds, and to some extent for abscesses, etc. Of course, one washed away some of the pus, but if one drained the cavity well it came away without washing.

Dr. A. T. MUZZY said he would like to feel that good might be expected from the treatment in the post-auricular abscesses of children.

Dr. A. RUPP stated that he would rather not syringe a suppurating cavity, unless there was a counter-opening; the danger, without a counter-opening, was that of forcing infection into healthy tissues.

Dr. MALLETT said that during his service at the hospital he had been with Dr. Phelps, who used glycerin. The speaker did not know whether he had originated that use of it; he used to inject with a solution in glycerin and had very good success. In some cases a great point was in making a small incision, and then injecting with iodoform and glycerin.

Dr. WALKER said that the breast abscess had not been a large one. The case in which he had tried to get a friend of his to use the treatment had been one of a large abscess. His friend had been afraid there would be absorption in that case, and had not cared to risk it. The speaker had tried it so many times that he did not think there would be any danger. The only abscess of the breast that he had tried it on was the one mentioned, which had contained only about half an ounce of pus. He had invited Dr. Mowry to the meeting, for he had used it in several adenitis cases, but it was to be feared he would not get to the meeting until late. The speaker's observation in reference to foreign bodies was based on the fact of the trial in the sinus containing the slough, and his idea was that if there was any dead bone, while the treatment might have some good effect, he did not think it would have much until the foreign body was removed. The object of washing out, which the previous speakers had mentioned, was simply to get clear of all the pus that was in the cavity. He thought the best way was to make a small opening, remove the pus entirely, and then use a solution of bichloride of mercury. He did not use peroxide of hydrogen in his cases. In one case he had used a carbolic-acid solution, and that had acted just as well as the bichloride. The main object in washing was to get rid of all the pus, so that there would be no further formation of it. Dr. Bridges had spoken of drainage. In these case there was no need of drainage if the opening was small enough and the cavity was sufficiently well cleansed. When these abscesses were opened, if they were curetted there would be considerable danger of absorption of iodoform, and there might be iodoform poisoning, but he had seen no signs of it in any case he had treated.

Book Notices.

Diseases of the Liver, Gall Bladder, and Biliary System; their Pathology, Diagnosis, and Surgical Treatment. By H. J. WARING, M. S., B. Sc. Lond., F. R. C. S., Demonstrator of Operative Surgery, and Senior

Demonstrator of Anatomy, St. Bartholomew's Hospital, etc. New York: The Macmillan Company. Edinburgh and London: Young J. Pentland, 1897. Pp. 11–385. [Price, $3.75.]

HAD this work been entitled *Surgical* Diseases of the Liver greater accuracy of description would have been attained, for this is essentially the field the volume covers, and in it we look in vain for a number of hepatic disorders whose nature is purely medical. With this comment, however, adverse criticism must cease, for in every other particular the work is one of great excellence.

Beginning with very admirable introductory chapters upon hepatic anatomy and physiology, the author treats briefly of jaundice and then of the diagnosis of diseases of the liver and biliary passages. Malformations are described in the fifth chapter, and then follow chapters upon the various surgical conditions which affect the liver and its ducts. These chapters form the bulk of the volume and are excellent in arrangement and presentation. The subjects are considered with a completeness which is altogether admirable, and the more so that the author very evidently is conscious of the distinction between enough and too much. The value of the text is further increased by the admirable style of composition which characterizes it. It therefore gives us pleasure to express our appreciation of a work so able, and we are confident that many will share this sentiment with us. The surgeon, indeed, will find the work invaluable, while the physician, too, will do well to possess it, since in the hepatic field the medical and surgical are often incapable of sharp separation, and in many cases the physician is clinically the predecessor of the surgeon.

The Liver of Dyspeptics and Particularly the Cirrhosis produced by Auto-intoxication of Gastro-intestinal Origin. (Clinical, Anatomo-pathological, Pathogenic, and Experimental Study.) By Dr. EMILE BOIX, Interne lauréat des hôpitaux de Paris (Médaille d'or, Concours de 1893), etc. Authorized Translation from the Latest French Edition by PAUL RICHARD BROWN, M. D., Major and Surgeon, United States Army. New York: G. P. Putnam's Sons, 1897. Pp. iv–133. [Price, $2.]

ALTHOUGH the clinical material studied is far too scanty for final conclusions to be reached yet, the contentions of the author of this very scholarly monograph appear to be well supported. Further research will therefore probably enlighten us upon a process of vast importance, the very possibility of which has hitherto been scarcely appreciated, and show that ætiological errors in the matter of hepatic cirrhosis have been unwarrantably perpetuated.

The character and scope of the work can be shown in no way so well as by a quotation of its "conclusions" entire. "First, alcohol is not everything in the ætiology of cirrhosis of the liver. Its pathogenic rôle demands a searching inquiry, which a long term of years can alone bring to a successful termination. In fact, it is indispensable that the condition of the alimentary canal should be carefully investigated with those suffering from cirrhosis, and an attempt made to ascertain if, with them, fermentations of gastro-intestinal origin do not give rise to the production of substances which are endowed with properties both irritating and toxic to the liver.

"Second, entirely independent of the alcoholic habit, we frequently encounter a pathological condition of the liver with dyspeptics, which is manifested by increase of the size of this organ; it is the *dyspeptic liver.*

"Third, this increase of size is temporary or permanent. Temporary, with frequent returns, it constitutes the *hepatic congestion* noticed for a long time by various authors, and especially by M. Bouchard. Permanent it is *dyspeptic cirrhosis.*

"Fourth, this *dyspeptic cirrhosis,* described for the first time in this work, is manifested *clinically* by an enlarged liver, smooth, *remarkably hard* (like wood), without increase in size of the spleen, without icterus, ascites, or development of the collateral abdominal circulation; *histologically,* by a diffused generalized cirrhosis, inter- and infra-lobular, with monocellular tendency, with relative integrity of the hepatic cells.

"Fifth, the duration of such an affection is very long, ten years and more, the size of the liver remaining almost the same. The termination may take place, as in the atrophic cirrhosis of Laennec, by exaggeration of the mechanical interference and production of ascites and enlarged abdominal veins, and also by terminal infection. The prognosis is then, as always, connected with the condition of the hepatic cells.

"Sixth, among the toxic substances which are elaborated in the alimentary canal, we must consider the acids of fermentation as possessing a marked sclerogenic action: butyric, lactic, valerianic, and especially acetic acid. As to colitoxine, it is probable that it also has a sclerosing action upon the liver, unless it reaches this organ in an amount sufficient to rapidly destroy the hepatic cells.

"Seventh, we must also take into consideration the predisposition most frequently created by the gouty diathesis (*arthritisme,* Hanot).

"Eighth, dyspeptic cirrhosis can only be confounded with cancer of the liver, from which it is distinguished by its very long duration; or with a large lithiasic liver (lithiasique), which is most frequently accompanied by icterus; or with an enlarged alcoholic liver, with which we will [*sic*] ordinarily find a large spleen and very soon ascites and enlargement of the subcutaneous abdominal veins.

"Ninth, the treatment should be especially addressed to the digestive functions. Intestinal antisepsis will be of very great assistance, and will give very satisfactory results, especially in the congestive forms. Calomel, in the dose of one centigramme, may be successfully prescribed."

A New Classification of the Motor Anomalies of the Eye, Based upon Physiological Principles, together with their Symptoms, Diagnosis, and Treatment. The Prize Essay of the Alumni Association of the College of Physicians and Surgeons, New York, for 1896. By ALEXANDER DUANE, M. D., Assistant Surgeon, Ophthalmic and Aural Institute, New York. New York: J. H. Vail & Co., 1897. Pp. 100. [Price, $1.25.]

IN proposing a new classification, the author acknowledges that he must be prepared to defend his position by showing that it serves some useful purpose. He thinks that he has proved that it does by the following conclusions:

1. The classification is based upon physiological facts instead of on mere external appearances.

2. Its divisions correspond to natural groups, distinct in nature and symptoms, and frequently requiring widely different methods of treatment.

3. The groups so made are readily distinguishable in practice by the signs they afford.

4. We can by means of the scheme here presented analyze the frequently occurring mixed forms, and, from our knowledge of the nature and tendency of the component lesions, determine to which of the latter our treatment shall be addressed.

It is the part of the reader to satisfy himself whether these conclusions are correct, and whether the author has proved his case.

Dr. Duane begins by giving a sketch of previous classifications and of the development of the idea of an ætiological as opposed to a simple anatomical classification. He considers, like most of his colleagues, that Stevens's classification is open to the serious objection that it reinstates the idea of grouping deviations according to their anatomical characters and puts the ætiological element in the background.

He then considers the nature of the problems to be solved, beginning with those of the movements of the normal eye, the actions of the individual muscles being exhibited in tabular form. These tables are a very great convenience, and assist materially in the diagnosis of any pathological conditions which may exist in a given case. He then passes to a consideration of the character and relations of the movements performed by the two eyes when working together, such as the associated parallel movements, movements of convergence and divergence, and movements of sursumvergence and deorsumvergence. These combined movements are also illustrated by tables which show very clearly the principle of associated antagonists in muscular action.

The determination of the range of excursion in associated parallel movements solves two distinct problems: the determination of the field of binocular single vision, and the determination of the field of binocular fixation. In the discussion of the subject Dr. Duane gives a very satisfactory account of the various special centres of convergence, accommodation, etc.

The subject of the projection of the field of fixation and of the field of action of each of the ocular muscles is illustrated by a very good picture. Then follows a very exhaustive account of the tests employed and their significance, divided into static tests, dynamic association tests, and dynamic disassociation tests.

Part II is devoted to the pathology of the subject. This is divided as follows: Classification of ocular deviations; anomalies of the individual muscles; anomalies of associated parallel movements, and anomalies of convergence, divergence, sursumvergence, and rotation movements. Certain terms are here constantly used which must be defined. Hypokinesis signifies deficiency of movement. Hyperkinesis means excess of movement. Parakinesis signifies irregular movement. Under this head there are certain dominant facts which must be remembered: 1. A deviation which increases or decreases in the performance of associated parallel movements by the eyes signifies an anomaly of one or more of the ocular muscles. 2. A deviation which remains constant or nearly so while the eyes are performing parallel movements is due, not to an anomaly of individual muscles, but to an anomaly of some one of the associated movements of the eyes. 3. A deviation which increases as the eyes are converged denotes a convergence anomaly, and one which increases as the eyes are passing from convergence to parallelism is a divergence anomaly. Dr. Duane uses the word "comitant" instead of concomitant throughout.

Under the head of the anomalies of the individual muscles is considered the whole subject of paretic and spastic squint, as well as structural and insertional squint. This will be to many minds the most interesting chapter in the little book. The distinction between overaction and underaction of a muscle is very clearly drawn. This chapter is also illustrated by a very useful table, and from a study of this table Dr. Duane deduces the following facts: 1. An homonymous diplopia, whether large or small, which increases as the eyes are carried to the right, indicates underaction of some muscle of the right eye or overaction of some muscle of the left eye. 2. A crossed diplopia which increases as the eyes are carried to the right indicates underaction of some muscle of the left eye or overaction of some muscle of the right eye.

The treatment of the anomalies of the individual muscles has been carefully studied out, and some at least of the rules laid down are to be commended. An attempt is first to be made to remove the cause. When the latter is unknown or can not be reached, an expectant treatment combined with corroborant measures, especially open-air exercise, must be employed. Dr. Duane regards strychnine as effective only in so far as it acts to improve the general condition, and in this he is undoubtedly correct. When the muscular deviation is slight, confirmed and more or less comitant prisms often do good service. Operative measures are to be adopted only when the condition has reached a stage in which it is no longer likely to undergo a change. Overaction of a muscle is to be relieved by tenotomy of the overacting muscle. Underaction is to be relieved by tenotomy of the associated antagonist to the underacting muscle, or, where this is impracticable, by advancement of the underacting muscle itself. These general rules may be expanded to fit the particular cases.

The next subject to be discussed is the anomalies of associated parallel movements, including paralysis and insufficiency, spasm and tremor, or nystagmus. The author believes that the conception of the central origin of nystagmus is a necessity. Movements of this character point to a pathological condition of the association centres, a fact now generally admitted by ophthalmologists.

Chapter vii treats of the anomalies of convergence. A true paralysis of convergence indicates some lesion of the convergence centre, and is relatively rare. Convergence-insufficiency is a much more frequent anomaly, and of this the author makes four varieties, viz: 1. Non-accommodative insufficiency, due to direct weakness of the interni. 2. Insufficiency secondary to a divergence excess. 3. Insufficiency of convergence dependent on an insufficiency of an elevator or depressor muscle. 4. Insufficiency of convergence, one of the evidences of a general lack of muscular power and co-ordination. This last variety is a very frequent one, and is met with in neurasthenia and allied conditions. The author then defines accommodative convergence-insufficiency as the development of a marked divergence for near points due to non-use of the accommodation, and gives a group of symptoms which we all recognize as typical. The treatment consists, first, in the correction of existing errors of refraction and in general tonic and strengthening measures. Training of the convergence by prisms with the base out often gives good results. If operative interference is indicated, the interni should be advanced, and in cases of divergence excess the externi should be divided.

Chapters viii and ix are devoted to a consideration of the anomalies of divergence and sursumvergence. Weakness of the divergence power, or divergence-insufficiency, is a very common and intractable condition, and the result of treatment is, as we all recognize, uncertain, whether the divergence is idiopathic or secondary to a convergence excess. The reviewer agrees with the author, when he states that direct exercise of the divergence with prisms, base in, is not of the least avail; and the constant wearing of prisms, base out, is a dangerous expedient, as it is certain to cause disuse of the abducting power. If operative interference is resorted to, we should advance the externi in cases of idiopathic insufficiency. In cases of divergence-insufficiency secondary to convergence-excess, tenotomy of the interni, combined with advancement of the externi, should be performed.

In cases of divergence-excess, the refraction must be corrected first. Subsequently tenotomy of the externi may be done, supplemented by systematic exercise of the convergence, and even by advancement of the interni.

In the chapter on sursumvergence-insufficiency and sursumvergence-excess Dr. Duane gives Stevens the credit of having first studied the subject and introduced the terms hyperphoria and hypertropia, but he is inclined to ascribe the condition to a spasm of sursumvergence or of the action opposed to sursumvergence. Finally, in chapter xi, we have a recapitulation of the entire subject, with a comparison of the new system of classification with the system generally employed, and the conclusions with which this review opened.

Dr. Duane has done much to clear up an abstruse and little understood subject. We feel convinced that his system of classification is at least approximately correct, and many of his views here published have been shared by the reviewer for years and acted upon in his practice. The little brochure is a very readable work and represents years of hard study in a field but little appreciated by the profession.

Ueber Eierstockstuberkulose. Von Dr. J. SCHOTTLAENDER, Privatdozent an der Universität Heidelberg. Mit 4 lithographischen Tafeln. Jena: Gustav Fischer, 1897. Pp. 169.

WHILE the title would lead one to think that the author intended to deal only with a special part of the pathology of one organ, the reader will learn that there are many discussions and conclusions about important facts in general pathology.

The observations are based on experiments performed on a series of twenty-one rabbits. A laparotomy having been performed under rigid aseptic precautions, pure cultures of tubercle bacilli were inserted into the ovarian tissue by means of a needle or a cannula, or in a few cases the ovary was simply rubbed with the culture. In one case the culture was inserted through the fimbriated opening of the intact tube. Three of the animals died—one from septic peritonitis, one from hæmorrhage, and another from the effects of the chloroform. The other animals were killed at different periods after the injections, varying from a few hours to eight weeks, and the organs were removed and hardened. A complete description is given of the gross and microscopical appearances of the organs taken from each animal. The influence of traumatism and foreign bodies in the production of cellular changes is fully considered.

In his discussion of the destructive relationship between the bacilli and cells the author attempts to disprove the phagocytic theory. The difference between the action of live bacilli and that of dead ones is thoroughly appreciated, and to the presence of a large amount of the poisons developed from the latter in his cultures the author attributes the marked exudative changes.

A greater part of the remainder of the book is taken up with a description of the different kinds of cells concerned in the inflammation, and with a discussion of their origin and relationship. The special features to which the writer calls attention are the early appearance of a large number of multinuclear leucocytes and the increasing number of small uninuclear cells (lymphocytes) as the interval of time between the injections and the killing of the animals increases. These lymphocytes, as well as the eosinophile and "*mast*" cells, he never found to contain bacilli. He supposes that plasma cells originate from the lymphocytes, and that the epithelioid cells represent degenerative forms of the plasma cells.

The extent of the disease varied from a few degenerative changes in the corpora lutea, connective tissue, vessels, and follicles to the formation of true miliary tubercles. The character of the inflammation apparently depended on the amount of the culture used and the completeness of its application to the ovarian tissue.

Contrary to the recent observations of Acconci, he found bacilli in the follicles, but thinks that they quickly perish. The lutein cells are thought to be more resistant to the disease than the cells of the follicles.

The course of the disease, in cases where there is only a formation of small nodules consisting of granulation tissue and giant cells, often ends in healing by a simple degenerative process, with or without the growth of a peripheral zone of connective tissue. In the far-advanced cases the inflammation spreads, resulting in suppuration and destruction of the ovaries.

The uterine and tubal mucous membrane was found involved only once. In the majority of the cases the peritoneal and muscular coats of these organs were slightly involved.

The tissues of the broad ligament showed true miliary tubercles in many of the cases.

No conclusions are drawn as to the transfer of the disease to distant organs, except that the liver is especially apt to become involved.

Appended to the text are two tables containing forty-three excellent drawings that are very helpful in explaining the descriptions.

Die bösartigen Geschwülste des Kehlkopfes und ihre Radicalbehandlung. Dargestellt auf Grund einer von der medicinischen Gesellschaft in Toulouse preisgekrönten Arbeit und einer in den Jahren 1894–1896 unternommenen Sammelforschung. Von Dr. JOHANN SENDZIAK, aus Warschau. Mit 10 Abbildungen im Text. Wiesbaden: J. F. Bergmann, 1897. Pp. 240.

THE masterful manner with which the author has handled his subject has made it a pleasure to read this book, and it impresses us as being the best and most complete monograph on malignant tumors of the larynx issued for a long time. The basis of the present volume was an essay on the same subject for which the Toulouse Medical Society awarded the author in 1893 the gold medal and a prize of a thousand francs. This work has been greatly enlarged, especially the part relating to therapeutics. Much of the matter found in the present volume was obtained by the author's general appeal for statistics to surgeons and laryngologists at large. The facts thus accumulated render the book especially valuable.

Carcinoma and sarcoma, the two subjects of the monograph, are considered separately. Each is carefully treated of from an historical, ætiological, and pathological standpoint. The diagnosis of carcinoma, and especially the distinctive diagnostic symptoms of laryngitis hypertrophica, benign tumors, papillomata, polypi, cysts, pachydermia laryngis, perichondritis, prolapsus ventriculi, syphilis, tuberculosis, lepra, lupus, catarrhal ulcerations, secondary cancer, and sarcoma, are ably set forth.

Perhaps the most interesting portion of this interesting work is that devoted to the treatment of carcinoma. We shall find here a complete history of every kind of treatment, from the earliest times down to this epoch of rational therapeutics, which latter began in 1873 with the performance of the first operation of total removal of the larynx by Billroth. Following the leadership of Billroth, surgeons undertook partial and complete removal of the larynx and resection of different portions, more especially in Germany. This period the author calls the second, or that of the birth of rational therapeutics. It was followed in 1888 by the third period. The latter was characterized by a great variety of opinions called forth especially by the very general interest felt in the treatment of a disease with which (1887–1888) the Crown Prince of Germany, afterward Emperor Frederick the Third, was afflicted. A flood of statistical works from many writers, such as Blum, Schwartz, Baratoux, Burow, Zesas, Hahn, Scheier, Solis-Cohen, Salomoni, Wolfenden, and Mackenzie, is characteristic of this period, in which the operations increased in number to a remarkable extent, with better results than previously. The last period (from 1888 to the present time) is also rich in writings of great value. Of these, the monograph of B. Fränkel on *Carcinoma of the Larnyx*, which appeared in 1889, deserves special mention.

In the limited space at our disposal it is impossible to go into details concerning the gradual development of the modern treatment of cancer of the larynx and the interesting statistics relating thereto. These have been collected here by the author with much care and labor, and form a valuable addition to the works on the subject. The statistical table, brought down to and including the year 1894, shows a total of 502 cases of operative treatment, 452 of carcinoma, and 50 of sarcoma. These are divided as follows: Endolaryngeal operations, 32 for carcinoma, 13 for sarcoma; tracheotomies, 22 for carcinoma; subhyoid pharyngotomies, 8 for carcinoma, 4 for sarcoma; thyreectomies, 92 for carcinoma, 12 for sarcoma; partial extirpation, 110 for carcinoma, 10 for sarcoma; total extirpation, 188 for carcinoma, 11 for sarcoma. As regards nationality, we find that Germany leads off with 49 cases of total extirpation of the larynx for cancer, more than a quarter of all the cases on record. Italy comes next with 19, then Austria with 18, Poland with 16, France with 15, Great Britain and America, taking the sixth and seventh places, with 13 each, Denmark 12, Switzerland and Russia each 11, Belgium 4, Australia 3, Asia 2, Holland 1, and Spain 1. The author describes carefully the technics of these operations according to all methods for complete and partial extirpation, after-treatment, etc., and gives a table showing the comparative results of the different procedures in 452 cases. A survey of this table shows that, so far as favorable results in general go, the endolaryngeal method is entitled to the first place, with 25 per cent.; partial extirpation shows good results in 22.7 per cent.; thyreectomy, 21.7 per cent.; while total extirpation has only 12.8 per cent., subhyoid pharyngectomy but 12.5 per cent., and tracheotomy 9 per cent. It should not be forgotten, however, that these figures are but relative.

Sarcoma of the larynx, on account of its greater rarity, does not receive so much attention as carcinoma. In earlier times no distinction was made between these growths, and only in the second half of the present century are descriptions of this variety of malignant tumors of the larynx to be found.

The first to describe primary sarcoma of the larynx was Broadbent, in 1861, and other well-known writers soon followed. Bergeat collected 114 cases of laryngeal sarcoma from literature, and Ziemssen, Mackenzie, Eppinger, Butlin, Schroetter, Gottstein, Massei, Jurasz, and M. Schmidt have contributed much to our works on the subject.

The reader is referred to this work for further information, and we feel sure that a careful study of it will amply repay any one for the time thus spent. The author certainly deserves praise and appreciation for his painstaking labor.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by ERNEST BESNIER, Physician to the Saint-Louis Hospital, etc.; TENNESON, Physician to the Saint-Louis Hospital; HALLOPEAU, Member of the Academy of Medicine, etc.; FOURNIER, Professor of the Faculty of Medicine, etc.; and DU CASTEL, Physician to the Saint-Louis Hospital. With the Co-operation of HENRI FEULARD, Curator of the Museum, and LÉON JACQUET, Secretary of the Dermatological Society of France. Edited and annotated by J. J. PRINGLE, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part VII. Pp. 157 to 174. [Price, $3 each part.]

PART VII of the *Pictorial Atlas of Skin Diseases* presents no unusual feature for comment. Jacquet again contributes two articles. One of them deals with a case of bromide-of-potassium eruption. The plate illustrating it, although superbly executed, might, however, be difficult to classify unaided, so unusual is the lesion depicted. It is this feature we deplore in this work, for, as we have before mentioned, it was promised that the superiority of this atlas to others was to lie chiefly in its representing the ordinary troubles of the skin in type form rather than the rare ones.

M. Jacquet redeems himself somewhat on this point, though, in his next article, on the hypertrophic papular syphilides. Of this disease, however, we can not be shown too many examples of the various lesions, as the editors of the work also seem to think, for the remaining two articles of this number are upon this subject and deal with gangrenous syphilides. The accompanying plates are very fine, especially the one representing the rupioid form, which is of unusual merit.

BOOKS, ETC., RECEIVED.

Hysteria and Certain Allied Conditions. Their Nature and Treatment, with Special Reference to the Application of the Rest Cure, Massage, Electrotherapy, Hypnotism, etc. By George J. Preston, M. D., Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore, etc. Illustrated. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. iv–9 to 298. [Price, $2.]

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. Macnaughton-Jones, M. D., M. Ch., Master of Obstetrics (Honoris Causa), Royal University of Ireland, etc. Seventh Edition, Revised and Enlarged. With Five Hundred and Sixty-five Illustrations. New York: William Wood & Company, 1897. Pp. xxiv–909.

Lectures on Pharmacology for Practitioners and Students. By Dr. C. Binz, Director of the Pharmacological Institute in the University of Bonn, etc. Translated from the Second German Edition by Peter W. Latham, M. A., M. D., Fellow and Late Senior Censor of the Royal College of Physicians, London, etc. Volume II. London: The New Sydenham Society, 1897. Pp. 451.

A Course of Practical Histology. By Edward Albert Schäfer, LL. D., F. R. S., Jodrell Professor of Physiology in University College, London. Second Edition. Philadelphia: Lea Brothers & Co., 1897. Pp. xi–298. [Price, $2.25.]

Illustrated Skin Diseases. An Atlas and Text-book with Special Reference to Modern Diagnosis and the Most Approved Methods. By William S. Gottheil, M. D., Professor of Skin and Venereal Diseases at the New York School of Clinical Medicine, etc. Portfolios VII, VIII, and IX. New York: E. B. Treat & Co., 1897. Pp. 157 to 228. [Price, each part, $1.]

Traité de médecine et de thérapeutique. Publié sous la direction de MM. P. Brouardel, Doyen de la Faculté de médecine de Paris, etc., et A. Gilbert, Professeur agrégé à la Faculté de médecine de Paris, etc. Tome quatrième. Maladies du tube digestif; maladies du peritoine. Par MM. Teissier, Roque, Galliard, Hayem, Lion, Laboulbène, Hutinel, Thiercelin, Dupré. Paris: J.-B. Baillière et fils, 1897. Pp. 882. [Prix, 12 francs.]

Traitement de la blennorrhagie chez l'homme et chez la femme. Par E. Delefosse, Docteur en médecine, etc. Paris: Librairie Coccoz, 1897. Pp. ix–261.

Sixteenth Report of the State Board of Health of Wisconsin, 1895 to 1896.

Medical and Surgical Reports of the Boston City Hospital. Eighth Series.

Original Methods for detecting and measuring Abduction and Adduction of the Thigh. By Phil Hoffmann, M. D., St. Louis. [Reprinted from the *St. Louis Medical Review*.]

The Medico-legal Bearings of the Commitment of the Insane, and the Proposed Amendments to our Law. By W. F. Becker, M. D., Milwaukee. Read before the State Conference Charities and Reform, Madison, Wisconsin, February 3, 1897.

Remarks on the New Law governing the Commitment of the Insane. By W. F. Becker, M. D. Read before the Medico-legal Section, Wisconsin State Medical Society, May, 1897.

Weitere Erfahrungen über die therapeutische Verwerthbarkeit des Tannalbin. Von Dr. Conrad Stein. [Sonderabdruck aus dem *Wiener medicinische Blätter*.]

Zur Frage der sexuellen Operationen bei Prostatahypertrophie. Von Professor Dr. K. G. Lennander. [Sonderabdruck aus dem *Centralblatt für Chirurgie*.]

Ueber zwei glücklich operirte Fälle von Nierensteinen. Von Professor Dr. K. G. Lennander. [Sonderabdruck aus der *Deutschen medicinische Wochenschrift*.]

Miscellany.

The Treatment of Cerebral Hæmorrhage.—In *Treatment* for July 8th Dr. Byrom Bramwell has an article on this subject of which the following is the substance: At the beginning of an attack of cerebral hæmorrhage, says the author, the first indication for treatment is to try to arrest the bleeding and limit the extravasation, and this is done by lessening the activity of the cerebral circulation. The head and shoulders should be raised rather than lowered. An ice-bag should be applied to the head and warmth to the feet. Leeches may be applied behind the ear, and a drop or two of croton oil administered. Venesection, bleeding from the temporal artery, compression of the common carotid artery, and ligaturing the carotid artery on the side of the hæmorrhage, are, he says, other methods which have been recommended.

Bleeding, Dr. Bramwell believes, is useful and especially indicated in those cases in which the face, head, and neck are turgid, the pulse is hard, full, and slow, and the left ventricle is hypertrophied. It is contraindicated, however, in cases in which the pulse is feeble, rapid, or irregular, the heart dilated or weak, and the patient very old or debilitated.

A brisk, watery purge acts, he says, in very much the same way as a moderate bleeding, but for the production of such a purge time is required; consequently in many cases venesection is preferable. In cases in which the advisability of bleeding is doubtful a drop or two of croton oil and an enema may be administered. The practice of applying a blister to the nape of the neck is, Dr. Bramwell thinks, of doubtful advantage. In severe cases, he says, it is useless, and in slight cases in which coma is speedily recovered from it is unnecessary. If a blister is to be applied at all, it is probably best applied to the shaved scalp between the ears over the top of the head. The ice-bag may be applied over the top of the blister.

Internal remedies Dr. Bramwell considers doubtful, as they have not much influence in arresting the bleeding, although nitrite of amyl or nitrite of sodium is perhaps useful in some cases in which the pulse is hard and tense; venesection, however, he considers a better remedy.

If coma becomes deeper and deeper, the pulse slower and slower, and the respiration more and more affected, and intracranial pressure is evidently steadily increasing as the result of a gradually increasing hæmorrhage, the advisability of trephining and tapping the hæmorrhagic cavity and so preventing rupture into the lateral ventricles—an event which is certainly and rapidly fatal—should be considered. Such cases are comparatively rarely met with.

The second indication, continues the author, is to attend to the condition of the bladder, and to take means to prevent if possible the formation of a bedsore. The patient should be placed at once, or as soon as he can be moved without risk, upon a water bed. Care must be taken, too, that the hot bottles which are applied to the feet are not too hot. Owing to the comatose or semicomatose condition, the patient will not of course make any complaint (the nurse has, under such circumstances, to feel for him), and, owing to the diminished trophic resistance of the skin, a degree of heat which would not be prejudicial to a healthy person may easily blister and burn the skin of a patient suffering from cerebral hæmorrhage. If there is retention of urine, the bladder should be emptied by the catheter at regular intervals; if there is incontinence, the patient should be kept dry and clean. This is a most important point, says Dr. Bramwell, for the development of a bedsore is one of the chief dangers in cases which do not immediately prove fatal.

The third indication is to sustain the vital powers by appropriate feeding and, if necessary, by the administration of cardiac tonics and stimulants. It is important to avoid giving anything which is likely to produce vomiting, for the straining which attends the act of vomiting may reopen the ruptured vessel, or, if the bleeding is still going on, increase it. For the same reason, stimulants should be withheld, unless they are absolutely required. If the heart is failing, and the pulse rapidly running down, stimulants must of course be administered even at the risk of increasing or re-exciting the hæmorrhage.

During the comatose state, Dr. Bramwell continues, the administration of food and liquids by the mouth requires to be conducted with great care and caution.

A nutrient enema may be given every four hours, and if necessary it may be supplemented every now and again by a nutrient suppository.

During the stage of coma, mucus, saliva, etc., are apt to accumulate in the mouth and pharynx, and add to the difficulty of the respiration and the tendency to death from asphyxia; for it must be remembered that in some cases the patient dies during the stage of coma from failure of the heart's action, in others from asphyxia and failure of the respiration, in others from the two conditions combined. In others, again, death is preceded or attended by hyperpyrexia.

By attention to posture (turning the patient on his side, turning the head to one side, etc.), it is in many cases possible to avoid the accumulation of mucus, etc., at the back of the throat, and so to diminish the risk of asphyxia. The relief is, however, in most cases merely temporary. In cases of cerebral hæmorrhage in which these conditions are developed the result is almost always fatal. It is very different when we are dealing with the status epilepticus. In that condition, Dr. Bramwell says, he has undoubtedly in more than one case, by preventing the accumulation of mucus, saliva, etc., in the back of the throat, and so preventing asphyxia, saved the life of the patient.

Provided the patient can swallow, a teaspoonful or two of milk may from time to time be given by the mouth, but once the bowels have been thoroughly well opened, it is better to feed the patient by the rectum. If there is difficulty in swallowing, if the administration of fluids by the mouth produces coughing or choking, the feeding should be entirely rectal. Alcoholic stimulants, digitalis, etc., may be given by the same channel, or strychnine (a drop or two of the liquor every two hours) may be administered hypodermically, the effect being of course carefully watched.

Possibly in some cases in which the respiration is much embarrassed and death from asphyxia seems imminent, oxygen inhalations might be beneficial.

The main objects of treatment during the first stage of cerebral hæmorrhage are to arrest the bleeding and to tide the patient through the stage of coma.

The fourth indication, continues the author, is to prevent and allay the secondary cerebral inflammation.

When symptoms indicative of this (a rise in temperature, headache, muscular twitchings, rambling, a return of the coma, etc.) develop, a brisk purge may be again administered, cold (an ice-bag) reapplied to the head, and bromide of potassium or a combination of bromide of potassium and chloral hydrate given in addition to the iodide.

If, during the stage of secondary cerebral inflammation, the pulse becomes very quick, feeble, or intermittent, cardiac stimulants—digitalis, strophanthus, strychnine, etc.—must be given; alcohol is probably better avoided. If the pulse tension is high the administration of remedies which depress the force and violence of the heart's action, such as aconite or nitrite of sodium, may perhaps be employed with advantage in some cases in addition to purgation.

As the symptoms of this secondary inflammation subside, the use of bromide of potassium and chloral hydrate should be discontinued.

After the symptoms indicative of this secondary inflammation pass off, complete rest must still be enjoined until the acute changes round the clot have subsided. The use of iodide of potassium, with perhaps a small dose of carbonate of ammonium or tincture of nux vomica, should be continued. During this, the early, stage of convalescence the patient must be carefully fed, the condition of the bladder and rectum attended to, and any cystitis or bedsores which may have developed treated. At this stage of the case gentle massage is useful. Faradaism of the paralyzed muscles, strychnine, and too active attempts at voluntary movement of the paralyzed parts, all of which may be most useful a little later, should be avoided, or, if employed, administered with great caution.

Some authorities, Dr. Bramwell continues, recommend the application of the constant electric current to the head—one pole being placed just above either mastoid process. The constant current, by its catalytic action, is supposed to aid the absorption of inflammatory products and to promote the nutrition and restoration of the damaged nerve elements. It is very doubtful, he thinks, if electricity applied in this way is of any real use. If it is employed the greatest care should be taken to use a weak current, and the effects which the current produces on the patient should be carefully watched.

In severe cases of hemiplegia the tendency to the development of contractures should be remembered, and passive movements (more especially of the fingers, wrist, and elbows, for it is at these parts that the contractures are most apt to be developed) carefully and diligently practised.

When there is reason to suppose that the acute changes have subsided—*i. e.*, at the end of six weeks or two months—the treatment appropriate for an ordinary case of chronic hemiplegia may be employed. A more liberal dietary may be allowed; the patient should be encouraged to practise systematic voluntary movements; general tonics, such as quinine and small doses of strychnine, may be given internally, and massage and electricity judiciously and cautiously applied to the paralyzed muscles.

The treatment (amount of exercise, etc.) must, of course, Dr. Bramwell adds, be carefully and judiciously regulated in accordance with the conditions which are present in each individual patient (the severity of the paralysis, etc.), the state of his heart, arteries, kidneys, etc., being taken into account.

Concerning the prevention of subsequent attacks, Dr. Bramwell thinks that much can be done to prevent and defer a second rupture. All exciting causes should be avoided; it is especially necessary to reduce the blood pressure when the pulse tension is excessive, such as sudden efforts, mental excitement, sudden exposure to cold, straining at stool, etc. A patient who has had an attack of cerebral hæmorrhage, however slight, should lead a quiet, routine life, and if his business entails much bodily exertion, mental strain, or excitement, he should be advised to give it up. In some cases, however, it is usually preferable to allow the patient to continue his work in a modified way rather than to worry in his idleness. The risks entailed by the work and the risks entailed by the idleness and the want of occupation have to be weighed one against the other.

The diet should be light and nutritious; if the patient is gouty, if his kidneys are cirrhotic, if his blood pressure is high, a non-nitrogenous diet is best. In these cases, says Dr. Bramwell, alcohol should be prohibited; a certain amount of tobacco, however, may be allowed. A certain amount also of gentle exercise is beneficial, but sudden exertions, running for trains, etc., should be rigidly avoided.

Salol Calculi.—In the *British Medical Journal* for July 10th, Mr. C. R. Marshall gives the following account, which he thinks may be of interest in view of a recent communication made by M. Brossard to the Académie de médecine: Some time ago Dr. Bradbury sent him an almond-shaped crystalline mass, possessing a yellowish color and weighing about fifteen grains, for examination. It was said to have been vomited by a young lady who had been taking salol for some months. The drug had been ordered for intestinal flatulence, and had given marked relief. For nearly six months a cachet containing ten grains was taken once or twice daily. Then attacks of severe colic, accompanied by vomiting, occurred, which nothing would relieve except the hypodermic administration of morphine. In one of these attacks the body in question was brought up, and, at the time, the statement was volunteered that similar masses had been frequently passed by the bowel. The substance had a salol-like odor, and gave the chemical reactions of this compound. The melting point was almost correct, so that the substance was practically pure. The use of salol was stopped, and the patient improved. Dr. Bradbury says that no further attacks have occurred.

The question of the formation of these calculi is considered an important one by the author. Brossard, he states, consulted Pappel, a chemist, and they concluded, probably rightly, that it was inadmissible that salol could be decomposed into its constituents, and that these should unite again. Experiments were then made to determine if, in an acid or alkaline medium, in the presence of pepsin or pancreatin, salol could be dissolved without decomposition, and, on changing the medium, if it could be deposited anew in the crystalline form. But only negative results were obtained. It was then thought that on account of the constipation the drug would only be eliminated slowly, and that a new dose would come into contact with the decomposition products of the old ones, that is, with salicylic acid and phenol. The effect of these upon the physical condition of salol was then determined. Salicylic acid was without effect. A solution of phenol, however, caused the powdered salol to agglomerate, and after some time to become liquid. It did not mix with the carbolic solution, but assumed the form of a transparent ball. If now the phenol solution was replaced by water, and a crystal of salol added, the whole of the salol was converted into a crystalline mass. This displacement of the phenol may be regarded as analogous to its absorption in the body.

This theory seems to the author to be weak in many respects, for the phenomena described by Brossard can not be obtained at ordinary temperatures in England. It is quite true, however, he continues, that salol will melt at a lower temperature in an aqueous phenol solution than in ordinary water, and this, he thinks, may account for the results obtained by Brossard and Pappel, whose experiments were carried out in Cairo. (In connection with the phenomenon it should be mentioned that phenol is capable of dissolving salol.) But even if we grant the results of those observers to hold at all temperatures it is difficult, he says, to accept the view put forward by M. Brossard. The most essential factor —the presence of sufficient carbolic acid to produce any influence—is improbable. Salol is only gradually decomposed in the intestine, and it is very probable that most of the carbolic acid formed is quickly absorbed. The explanation of this, the author thinks, is a simpler one. It is due to the fact that the melting point of salol (107.3° F.) is a little above the normal temperature of the body. Very often, especially after meals, the temperature of the stomach is above this point, and if salol is present melting of the crystals must occur. The fluid thus produced does not readily mix with the food, and when the gastric temperature sinks to, or better, as after partaking of cold water, below the normal, recrystallization occurs. The mass thus produced is not composed of minute individual crystals as in the first instance, but is in the form of single solid lumps made up of the crystals in close union. Mr. Marshall states that this case may easily be demonstrated by a few test-tube experiments. The solidification does not necessarily occur in the stomach. It may happen in the intestine, even in the presence of a one-per-cent. alkaline (sodium carbonate) solution. When pure salol is administered in cachet form the best possible condition for the formation of a calculus is present. The crystals, when softened or melted, readily cohere, and may subsequently recrystallize. Even in a well-made emulsion, when heated to from 104° to 107.3 F., the salol tends to aggregate, though he says he has not seen perfect conglomeration. Probably the reasons that salol calculi have not been described oftener are that they have not been recognized, and that some gastro-intestinal disease is necessary as a predisposing cause. In Professor Bradbury's case, he continues, the cause of the colic would not have been diagnosticated but for vomiting of the calculus. Retention in some part of the alimentary tract is perhaps necessary, or is at least a favorable condition; in both the cases described constipation was a prominent symptom. As the mass of the largest calculus in Brossard's case was much greater than any individual dose given, some accumulation must have occurred, and probably the same thing happened in Dr. Bradbury's case. Mr. Marshall states that, unfortunately, the mass was not weighed at once, and it was afterward lost in his absence during the cleaning of the laboratory. The necessity of retention at some point is thus explained, as it is improbable that very small calculi (which must ordinarily be found, if found at all) would produce symptoms of a serious nature.

The author considers that the importance of the formation of salol calculi, apart from the serious symptoms to which they may give rise, lies in the fact that the activity of the drug is markedly diminished. Even in the intestine, he says, a mass of salol can only be acted on slowly by the intestinal juices and microbes, and probably a great part passes out unchanged. This slow action all along the intestinal tract may be an advantage in some conditions, but it is certainly not in all. The chief fault seems to be in the method of administration. Salol—and the same thing holds good for other insoluble bodies of similar melting point—ought to be rubbed up with some innocuous powder, or given in the form of an emulsion, as recommended by Sahli. In this way the activity of the drug is not diminished, and the possibility of calculous formation is reduced to a minimum.

The Effects of Ether on the Kidneys.—At a recent meeting of the Boston Society of Medical Sciences, a report of which is published in the *Journal of the Boston Society of Medical Sciences*, Dr. J. B. Ogden read a paper on this subject in which he gave the following account of a series of observations which were undertaken to determine, if possible, the actual effect of the elimination of ether on the kidneys:

The urinary examination in each case was as follows: Color—reaction—specific gravity—tests for albumin and sugar—microscopical examination of the sediment. The test for albumin was made by first filtering the urine in order to remove any and all suspended matter; the urine was then placed in a wineglass and colorless nitric acid allowed to flow down the side of the tilted glass, using about a third as much acid as urine. This preparation was then placed on a table in a good light (avoiding direct sunlight) and a dark cloth adjusted obliquely at the side and slightly in front of the wineglass. If the slightest cloud or haze could then be seen just above the junction of the acid and urine it was designated as the slightest possible trace of albumin. If, still using the dark background, the cloud was found to be somewhat more distinct, it was termed a very slight trace. Fehling's test for sugar was used in every instance.

The urinary sediment was carefully examined for formed elements, especially for casts and blood globules, and was always given the same attention whether albumin was present in the urine or not.

If the urine was free from albumin, the sediment was invariably found to be free from casts or blood globules. An effort was made in the selection of the cases to take only those in which there was little or no renal disturbance before administering the ether. Urines containing more than a small amount of pus and blood were eliminated.

The cases studied were, for the most part, those in which a minor operation was required, so that there was a very small loss of blood. The effect of acute anæmia could practically be excluded as regarded any renal disturbances. The total number of cases studied was seventy-five.

Albumin.—In 34.6 per cent. of these cases albumin was not found before the ether was given, but was found afterward. In 34.6 per cent. albumin was found before, and was increased afterward. The total percentage of cases, then, showing albumin, or an increase in the albumin, after ether was given was 69.2 per cent. In 26.6 per cent. of the cases there was no increase in the quantity of albumin after the ether was given. In 1.54 per cent., albumin was not found before or after ether was given. In 1.33 per cent., albumin was found before but was considerably less after the ether was given. In 1.33 per cent., albumin was found before ether was given, but was absent afterward. In these last two instances a few blood globules were accountable for the variation in the quantities of albumin, as casts were not found in either case.

Albumin, says Dr. Ogden, may be present in the urine without the presence of renal elements—in other words, without any renal disturbance or disease. It is therefore necessary to consider the presence or absence of renal casts, in order to judge of the presence and to a large extent the degree of renal disturbance.

Casts.—In 14.6 per cent. of the cases renal casts were found in the sediment before ether was given, and were increased in number afterward. In 57.3 per cent. casts could not be found before, but were present after. This makes a total of 71.9 per cent. of the cases in which there was a renal disturbance or an increased renal disturbance, as shown by the number of casts. In 22.6 per cent. casts were found before, and no change in the relative proportion after ether was given. In 5.3 per cent. casts could not be found either before or after. It seems that in 22.6 per cent. of the cases the patients passed a more concentrated urine after taking the ether than before, and this, says Dr. Ogden, brings up two important points to be considered: 1. Whether or not a part of the renal disturbance may not have been due to the elimination of a more concentrated urine after than before the ether. An analysis of the cases under consideration shows that only about ten per cent. of the patients passed a urine which was highly concentrated after taking the ether, the remainder (12.6 per cent.) passing only a slightly concentrated urine. Dr. Ogden thinks there is very little doubt that a highly concentrated urine may set up an active hyperæmia of the kidneys. So he deducts this ten per cent. from the 71.9 per cent. of cases, making a total of 61.9 per cent. of all cases in which the kidneys were affected, apparently, by the ether.

2. Because of this concentrated condition of the urine, there arises the question of whether or not there may not have been a relative increase in the quantity of albumin or the number of casts. This calls out a negative answer, for it was found that in this 22.6 per cent. of the cases such a relative increase in the albumin and casts did not exist.

The quantity of ether given in these cases varied from one hundred to eight hundred cubic centimetres, and the length of time the patients were under the influence of the ether varied from ten minutes to an hour and a half. There seemed to be no relation whatever between the amount of ether given or the length of time that the patient was under its influence and the severity of the renal disturbance, for there were generally as many casts after a small operation in which a small quantity of ether had been given as after a larger operation and a larger amount of ether. As a rule, the length of time that casts were found in the urine after ether had been given, when they had not been present before, varied from three to ten days.

Some of the cases could not be watched for a longer period than this, so that in this respect the data are far from being complete. Sugar was found in the urine of only one of the seventy-five patients after ether was given, there being none before. Although the amount of sugar was very slight, it was eliminated in traces for three days, and then entirely disappeared. So far as Dr. Ogden was able to judge, the quantity of albumin and the number of casts were not affected by the sugar, as both albumin and casts continued some days after the sugar had disappeared.

The urine of children did not show evidence of any more marked renal disturbance from ether than that of adults.

The Local Use of Dry Heat in the Treatment of Rheumatoid and Other Diseases of the Joints and Tendons.—In the *Medical News* for July 17th, Dr. H. C. Wood, of Philadelphia, relates his experience with this treatment in cases of rheumatoid arthritis, chronic rheumatism, subacute rheumatism, and rheumatic neuritis, and states that the results of the treatment in diseases of the joints themselves have not, in his experience, been sufficiently satisfactory to warrant the practitioner in urgently recommending patients to undergo the expense and difficulty of the treatment.

In his experience and in that of others, he says, the earlier treatments have been followed by an immediate acute paroxysm, and this, he thinks, would indicate that softening of deposits of urates and consequent absorption of uric acid into the system may result. In most cases of chronic rheumatism, however, and especially those of rheumatoid arthritis, as seen in this country at least, there is no distinct local deposit of urates. There is reason to believe that it is possible to affect the nutrition of the joints of the hand more than those of the feet; this fact, if indeed it is a fact, he adds, is evidently dependent upon the greater readiness with which a small joint can be superheated than a large one can. On the other hand, in cases of diseases affecting the tendons and ligaments, the results were very marked. Dr. Wood states that in several cases of acute sprains the effects were immediate and pronounced. In one case of chronic inflammation following sprain of the soft parts of the ankle which had entirely disabled the patient for nine months in spite of careful medical treatment, complete restoration was obtained after six of the hot-air treatments. In two cases of disabling tenosynovitis in baseball pitchers, there was immediate relief of the pain produced by moving the arm, and a very few treatments enabled the men to resume work. In one case of long-continued contraction of the wrist tendons and general distortion of the fingers, diagnosticated by Dr. Weir Mitchell to be the result of gout, three treatments were followed by complete cure.

In using the apparatus, Dr. Wood found that if the limb was lightly enveloped in patent lint, a temperature of 330° F. could easily be borne by most patients. All temperatures were tried in these treatments, but the author finally settled upon one ranging between 270° and 320° F. Any carelessness in the use of the apparatus was likely to result in the production of severe burns, but those, he says, which occurred in his office were all at a lower temperature, and in the first use of the machine, before the nurse had become thoroughly acquainted with the application of the remedy.

Dr. Wood is of the opinion that the local, hot, dry-air bath is of little value in rheumatoid arthritis; that it has probably a field of usefulness in subacute gouty inflammations with deposits about the tendons and their sheaths, or parts outside of the joints, and is of great service in the treatment of ligamentous inflammations and in tenosynovitis, whether of rheumatic or of traumatic origin.

The author goes on to say that when the patient is heavily wrapped in blankets, it is possible to raise the general temperature several degrees, as shown by the free sweating thus produced. The local bath is capable, without doubt, he says, of relieving subacute or even acute lumbago and other forms of rheumatism in very much the same way that the free sweating by the general hot-air or water bath brings relief. There is not the slightest reason for believing, however, he continues, that the method acquires any further constitutional influence than has been spoken of, and it seems an absurdity to suppose that it will distinctly affect the rheumatic diathesis or in other way prevent those relapses which in rheumatoid arthritis and chronic rheumatism are the destructive factors of the disease.

The External Treatment of Eczema.—In the June number of the *Annales de dermatologie et de syphiligraphie* M. Leredde states that he has employed picric acid in the treatment of eczema in the Hôpital Saint-Louis, and that he has obtained remarkable results in acute eczema and in all affections classed as artificial dermatitis. The œdema disappeared with the greatest rapidity. In order to judge of this, he says, it is sufficient to treat the lesions on one side of the body with picric acid and those on the other side with any other applications, when the eczema is bilateral, and it will be seen that the epidermic lesions will be cured with equal rapidity, and the picric acid will produce no irritation.

The application of the acid is very simple. The diseased regions are covered with compresses which have been soaked in a saturated watery solution of the acid, and over them an impermeable linen covering is placed. This dressing is renewed every day. In chronic eczema, says M. Leredde, this treatment presents no advantages.

Regarding the silver-nitrate treatment, M. Leredde states that he applies rubber after previous asepsis, and at the end of twenty-four hours he paints the affected parts with a one-in-forty solution of silver nitrate. After desiccation the rubber is again applied. Twenty-four hours after, the parts are painted again with a one-in-thirty solution, and the rubber is applied as before. The strength of the solution may be increased to one in fifteen. If a slight inflammatory reaction, which is rare, is produced, the painting must be interrupted for forty-eight hours and the strength of the solution diminished. This treatment should be applied after the parts have been cleansed and denuded, as this, M. Leredde thinks, cuts short the duration of the treatment in a remarkable manner and presents no contra-indication.

THE NEW YORK MEDICAL JOURNAL, August 7, 1897.

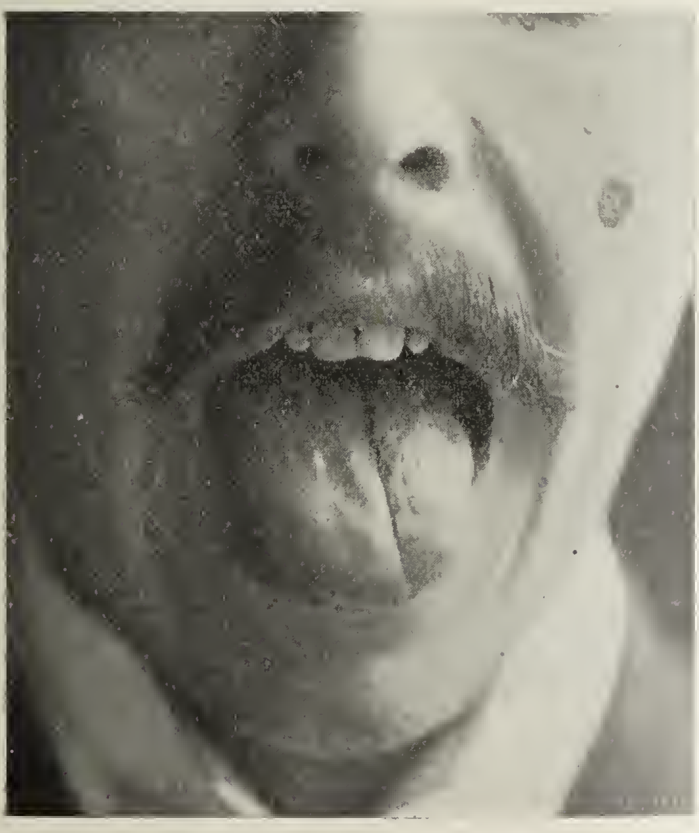
Original Communications.

HEMIATROPHY OF THE TONGUE.

By HAROLD N. MOYER, M. D.,
CHICAGO.

There recently came under our observation an example of this rare condition, which is decidedly exceptional in the literature, from the fact that it was due to a gunshot wound.

The patient, a young man twenty-five years of age, received a wound in the left cheek from a 32-calibre revolver, November 22, 1892. At the time of the accident a physician was called who probed the wound, but did not locate the bullet. It was then believed that the bullet had slipped between the muscular sæpta of the neck. Later an attempt to locate the bullet placed it "in the bone," but no effort was made to remove it. Immediately after the accident the jaws were firmly locked together. At the end of a week this began to subside, and with the healing of the wound, at the end of three weeks, the mouth could be opened to admit small particles of food. During this time his voice was very weak, and articulation imperfect. As these symptoms improved he noticed that he could not manage food as well on the left side of his mouth as on the right. If it collected between the teeth and lips or adhered to the roof of the mouth, it was necessary for him to remove it with a spoon. It was about three months before the mouth could be fully opened. The patient knew of the limited motion, but paid no attention to it until about one year later, at which time he noticed that the left side of the tongue was becoming smaller, and it seemed to be drawn to one side. He then observed some difficulty in articulation and some salivation, the latter not being very marked.



Within the last two years there has been an improvement in all of these symptoms. The articulation has improved, but he can not speak rapidly, and if this is attempted the speech becomes unintelligible. Slow articulation is distinct and clear. Taste has been impaired almost from the beginning, and food in the left side of the mouth seems dry and tasteless. The salivation is now only slight, not sufficient to cause any annoyance. Careful testing shows that taste is completely abolished on the anterior and posterior surface of the left half of the tongue. The tactile sense in the left half is retained. The velum is normal, and the faucial reflex intact. Sensation in the face is normal. Sense of smell is the same on both sides and normal. Jaw reflex normal.

Since the patient has been able to open the jaw there has been a disagreeable crackling sound at the articulation. There is no pain, and the jaw can be opened to the fullest extent.

The accompanying figure shows the atrophied condition of the tongue. The dark spot on the left cheek marks the wound of entrance of the bullet.

HODGEN'S SPLINT FOR FRACTURE OF THE THIGH.

By GEORGE S. BROWN, M. D.,
BIRMINGHAM, ALA.

I wish to recall to the attention of the profession the old but much-neglected Hodgen's splint for fractures of the thigh. When one sees this apparatus in operation it is difficult to understand why it should be so utterly neglected for the more troublesome, uncomfortable, and less effective Buck's apparatus and plaster-of-Paris dressings. The only reason for this neglect that I can see is that a written description of the appliance conveys a very poor idea of its principle. Then, too, the modern text-books mention it as of only secondary importance. I am sure that any one with an adequate conception of the principles involved in the treatment of this fracture would, upon seeing this apparatus applied, at once admit that it meets them better than any other so far used. The accompanying photographs will perhaps go far to explain the method of application. The iron frame (made of three-sixteenths-inch iron) runs along the inner and outer sides of the leg; it is continued across the sole of the foot, and its upper ends are joined by arching over the thigh at the perinæum. It is bent at a slight angle at the knee, and along the thigh and leg portions are rings or hooks to which are attached the supporting straps or cords. Adhesive strips and foot block are attached to the leg just as though the Buck's extension were to be applied. The cord (or preferably elastic band or spiral spring) from the foot block is fastened to the short portion of the frame running across the sole of the foot. Instead of the underlapping muslin strips used in the original I use simply one piece of canvas. One side of this is fastened to the inner side of the frame. The frame is next attached by means of the straps to the ring on the end of the cord running over the pulley. A tent block on the cord makes it very convenient to lower or raise the whole. The frame is now let down over the injured limb; the latter is gently lifted while an assistant slips the canvas under and pins it to the other bar of the frame. The adhesive strips are applied to the leg. The foot block is fastened to the transverse portion by the spring or elastic bands, and the cord over the pulley is shortened until the hammock swings clear of the bed. The foot of the bed should be elevated, to insure the counter-extension of the weight of the body. For the first forty-eight hours the angle of the cord (which is the measure of the extension applied) can be gradually increased by rolling the bed gradually, from day to day, away from the pulley; in this way the muscular resistance is overcome in an ideal manner. As the pull is increased the foot legs of the bed should be still further elevated (to prevent the patient slipping toward the foot), and thereby preserve the counter-extension. The points of traction are so distributed as to insure the patient against all discomfort from too great a pull or pressure at any one place. It will be seen that the pull is partly on the sides of the legs through the adhesive strips, partly on the calf muscles by reason of the leg being partly flexed, and, finally, a good part of it is in the friction and weight of the leg along the whole of the canvas hammock. To enumerate the advantages of this splint, I would mention: 1. The results. Owing to the constantly acting extension, shortening is reduced almost to nothing. In twelve cases treated by myself there was no shortening at all, except in one case, which I will mention again further on.

2. I think union is facilitated by the exercise which both the patient and the limb get. My patients, from the first, sit half up to eat their meals or to use the bedpan, pot, or urinal; in fact, they move about all over the bed, and even lift themselves across from one bed to another when it is rolled alongside. No matter what the movement of the patient, provided it is within the range of motion of the hip joint, the seat of fracture is absolutely undisturbed. The frame, canvas, and limb, above and below the fracture, swing as a whole, suspended between the pulley cord and the ligaments of the hip joint. This is easily demonstrated by swinging it from side to side by a push of the hand. This can be done at any time from the very first with no complaint whatever from the patient of movement at the seat of injury or pain.

3. I would mention the comfort of the patient: a weighty consideration in the case of private patients, but a matter of small moment in hospital practice with most of us. The comfort of the patient is obvious from the description I have just given of his liberty of movement. One of my patients was a girl of twelve who was rarely still while awake; she occupied herself with all manner of amusements, and went from one side of the bed to the other forty times a day, and yet the result was perfect.

At the present day, of course, the ambulatory dressing would be the best in a case of this kind, but there will always be many patients who can be treated only in bed; such are those who are too heavy or unwieldy to get about with a heavy dressing, and those who are, in addition to the fractured thigh, otherwise badly injured. In all such cases the Hodgen splint is of the widest usefulness.

It is somewhat remarkable that so useful and simple a device as Hodgen's splint should fall into disuse, or rather, should fail to be as widely adopted as it deserves. Disuse is the wrong word, for I believe that no surgeon who ever fully understood its principle ever abandoned it. Its use is practically confined to a few surgeons in the West and South, who during the past thirty years have come directly or indirectly within the area of the personal influence of the surgeon whose name it bears. In short, it is used by those surgeons who have seen it applied. It is unfortunate that a description of this apparatus can not convey an adequate idea of its effectiveness. In Hamilton's and Ashhurst's text-books this splint is classed along with Smith's anterior. This is the strongest evidence, to my mind, that neither writer ever saw the Hodgen apparatus properly applied. Ashhurst gives it three lines, and says it is similar in action to Smith's. Hamilton says practically the same, and dismisses the subject by saying that no suspension apparatus can ever give any useful amount of extension. The facts are that the Smith splint does not afford any useful amount of extension, while the Hodgen does afford it in a more useful amount than any other appliance yet devised. And this is the chief difference between the two. If the suspension cord is long (say hung from the ceiling), the angle can be increased and the foot of the bed elevated until the pull is far beyond what is necessary. As a matter of fact, when the limb is thus suspended the extension is so constant that not much more than half that required

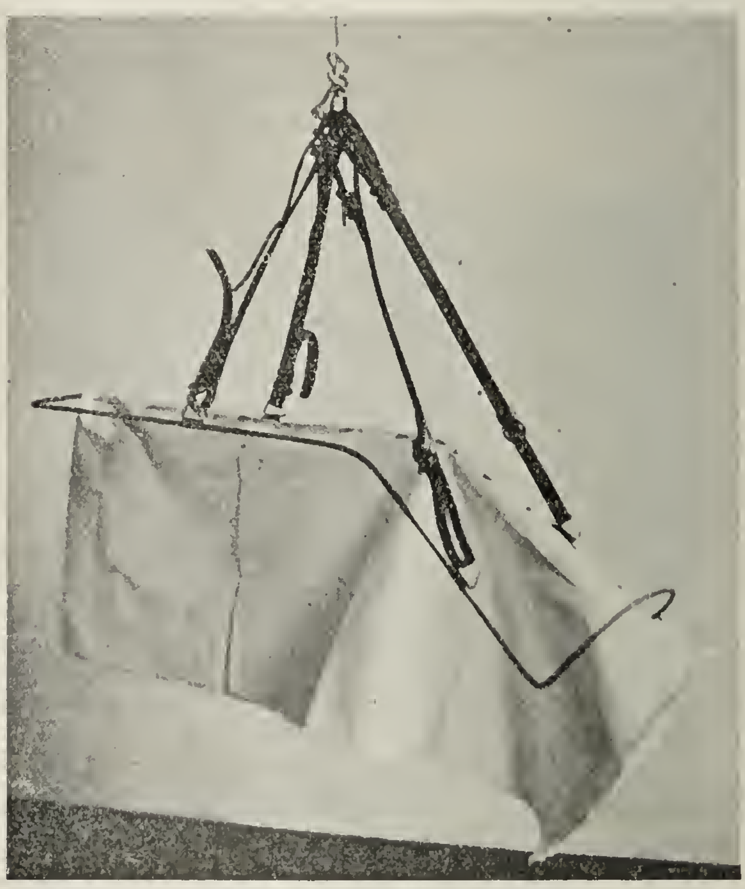


Fig. 1.

in Buck's plan is necessary, the latter having the friction of the limb on the bed to overcome.

Fig. 1 is a photograph of the entire apparatus ready to be applied. It is simply necessary to lift the limb, apply the adhesive strips, cover with a roller bandage to just above the knee, slip the canvas under and pin it around the opposite bar, and shorten up the cord so that the whole will swing clear.

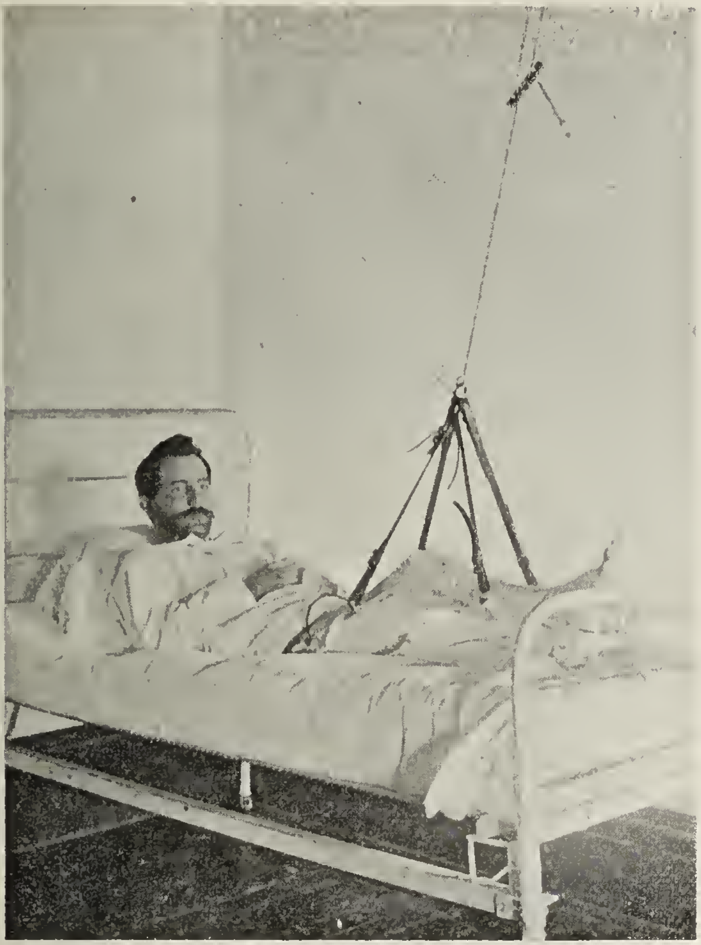


Fig. 2.

Fig. 2 shows a patient with a simple fracture of the right thigh. At the time he was hurt he also sustained a crush of the left leg, necessitating amputation at the middle of the thigh. The stump suppurated and required daily dressing for weeks, and it is not difficult to imagine what an annoyance the use of the bedpan would have been had the right limb been pinned down with a Buck's extension and sand bags.

Fig. 3 shows a man who had his thigh caught between the drawheads. A compound comminuted fracture with the protrusion of two great bunches of muscle as large as the fist. As the artery was uninjured, numerous free incisions were made in the skin, gauze drains introduced, the torn and ragged muscles cut away, fragments of bone removed, the broken shaft united with two of Hansmann's silver plates and screws, the whole enveloped in a hot carbolized wet dressing and swung up in a Hodgen splint *without* extension. In this case the hammock was made of two pieces of canvas, one under the thigh the other under the leg. The photograph shows the thigh portion unpinned from one side and the dressings removed. The limb is very comfortably supported, while it is being dressed, by the lower or leg half of the hammock, while the broken ends are held in place by the silver plates. For three or four weeks the carbolic poultice was changed every four hours by a single nurse and without pain to the patient. The sepsis was severe, and the thigh had to be repeatedly incised on all sides. When the under side had to be cut and drained, and, indeed, at every morning dressing, it was our custom to slowly elevate the limb by means of the pulley, and at the same time slip a pillow under the patient's back and sound hip. Any one who has treated a suppurating thigh without such suspension will readily see what a help it was in this case, in dressing the limb, in the use of the bedpan, and in being able so easily to change the position of the limb, allow the patient to turn partly to either side, and to otherwise make him comfortable. I feel sure that without this suspension, which so much facilitated the drainage and cleaning of the wound, this man would have lost his limb, and possibly his life. The silver plates as usual, in spite of the suppuration, were covered in and gave no trouble, and the man now walks around with a perfectly straight leg and an inch of shortening. I hope I have not written very much too much on this old subject. To my mind the Hodgen splint is scientific and humane, and compared with it Buck's apparatus, the long splint, and plaster dressings are little short of crude and barbarous.

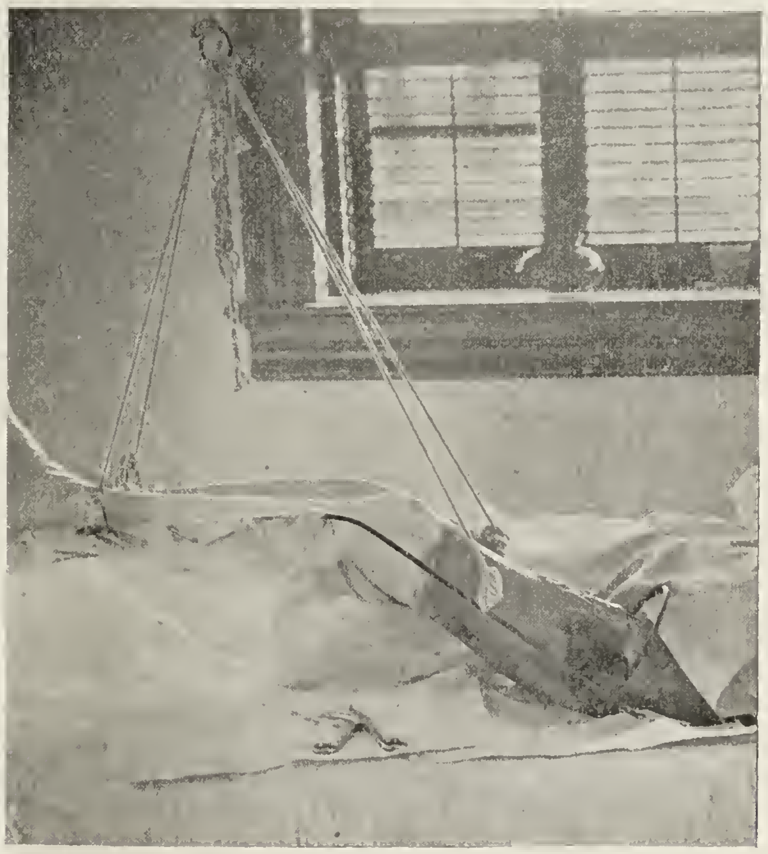


Fig. 3.

WOUNDS OF THE HAND.

By GEORGE W. SPENCER, M. D.,
DEMONSTRATOR OF SURGERY, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

FOR several years past my attention has been particularly called to wounds of the hand. When we consider how extremely common these wounds are, and that they occur principally in the laboring class, whose daily bread largely depends on the usefulness of their hands, we arrive at a just estimate of the importance of such accidents. Too much can not be said in regard to the necessity for the early recognition and radical treatment in an injury of this region. I have had under my care patients that have been treated daily in the surgical dispensary for weeks and months, suffering from the effects of a palmar abscess. Palmar abscess is apt to produce disastrous results. Suppurative teno-synovitis arising from wounds of the fingers and palm leads in some instances to palmar abscess, agglutination of the flexor tendons, and suppurative cellulitis of the forearm. The following cases are typical of these conditions:

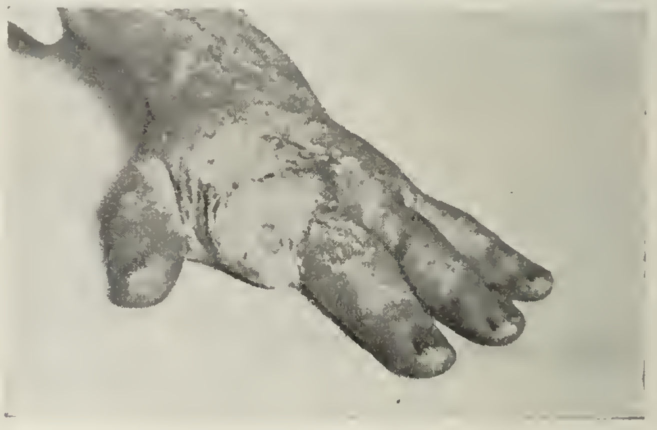
Case I.—In November, 1892, a Jewess came to the Jefferson Hospital complaining of severe pain in the little finger and palm of the left hand. She said one week previously she had been pricked in the little finger by a splinter. When she was admitted, the finger was of almost twice its normal size, was hot and red, the palm somewhat elevated, and the pain was severe. A diagnosis was made of pyogenic infection of the finger followed by a palmar abscess. She was told of her danger, was advised to go home and bring a relative or friend, and at once be anæsthetized and have the abscess opened. Instead of coming back that day, as requested, she did not return until the afternoon of the next day, when I discovered just above the annular ligament a swelling of the size of an English walnut. The lower fourth of the forearm was red, swollen, and œdematous, and the axillary glands were beginning to enlarge. This case not only demonstrates the danger of a punctured wound of the little finger, however small it may be, but also shows the progress infection is capable of making in a short time, and the necessity for the earliest possible interference. She was anæsthetized, and at once an incision half an inch in length was made to the bone, in the long axis of the little finger. The palmar abscess was opened over the deep palmar arch by Hilton's method, a counter opening was made just above the wrist, and a piece of iodoform gauze was passed from this opening into the palmar incision. After soaking the hand in a bichloride solution (1 to 1,000) for five minutes, the incision in the finger was swabbed with pure carbolic acid and the hand was dressed with wet bichloride dressings. The area of cellulitis of the forearm was painted with iodine and alcohol, equal parts, and covered with lint saturated with lead water and laudanum. An internal angular splint immobilized the arm and hand. The girl made a rapid and good recovery, and went to work in two weeks with a good hand.

Case II.—In June, 1894, an employee on the Baltimore and Ohio Railroad presented himself at the dispensary with a palmar abscess and cellulitis of the forearm, caused by a slight contusion of the palm. He was advised by his family physician to put on a flaxseed poultice and wait for the abscess to point. He waited for four nights. During the fourth night he became frantic with pain, plunged the blade of his pocket knife into the palm, and let out the pus. This man was prevented from performing his daily work for three months, and still has stiffness of the flexors.

Case III.—In May, 1894, a seamstress was admitted to the dispensary with a broken needle lodged in the palm near the thenar eminence. Dr. M. H. Williams, of the department, made an incision and extracted the piece of rusty needle, which had been there for five days. An ounce of green pus escaped which had been concealed by the tense, unyielding palmar fascia. No sign of pus existed except pulsatile pain, and there was hardly enough swelling to be noticeable. This was one of the worst abscesses that any of us had seen; still there was only one sign, and that was pulsatile pain. This patient was prevented from doing her daily work for ten weeks, and her arm was saved with great difficulty.

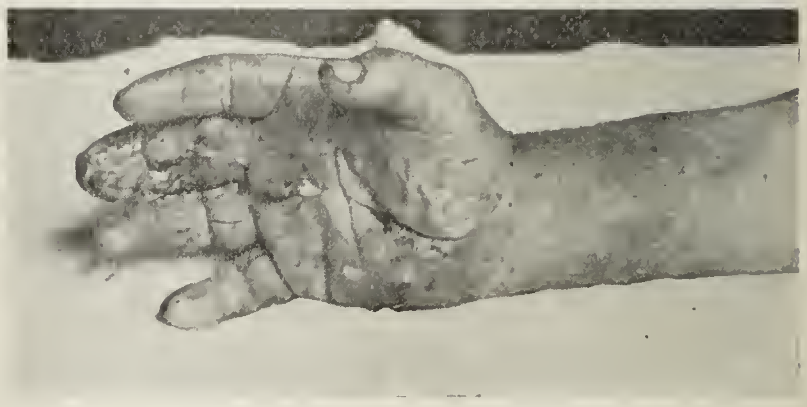
Case IV.—In February, 1895, A. B., aged sixty-four years, shoemaker by occupation, applied at the dispensary, and stated that in 1864 he had received a lacerated wound on the posterior surface of his hand just below the annular ligament of the wrist joint. For thirty years this wound was continually dressed with flaxseed poultices and salves, and as a result he was found to have lost all power of flexing the hand. The flexor tendons had sloughed away. He carried with him a two-ounce bottle half full of the sloughed tendons, the pieces varying in length from an eighth to half an inch. This man has a permanently useless hand.

Case V.—L. S. was placed under my care by Dr. Erwin, August, 1896. The patient stated that a month before his appearance at the hospital he noticed that his index finger began to swell and pain him. He consulted a barber, who advised him to apply pitch. After a month of the pitch treatment it was found that the tissues as well as the bones of the finger had undergone necrosis, and nothing short of an amputation would do any good (see Photograph No. 1).



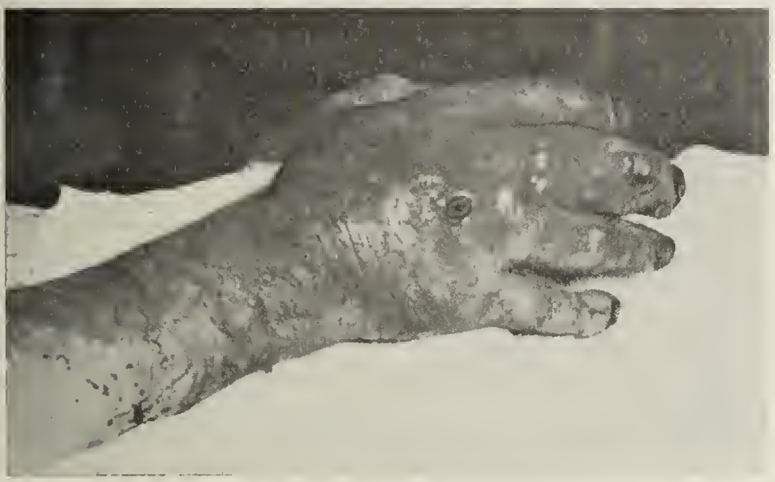
Photograph No. 1. Case V.

Case VI.—In August, 1896, W. J., carpenter, appeared at the dispensary and stated that while at his work he struck the middle finger of his right hand against a board. That night the finger began to pain and swell. Three days after the traumatism he consulted an old army surgeon, who advised him to put on slippery-elm poultices, which he did for one week. At the expiration of that time the finger felt as though it was getting



Photograph No. 2, Case VI, palmar surface.

worse, so he consulted him a second time, when the doctor told him to discontinue the slippery-elm poultice and try a flaxseed poultice. After five visits and three weeks of poulticing he came to the dispensary. When admitted he had symptoms of septic infection. The tissues on the palmar surface of the middle finger had sloughed and were discharging pus. The finger measured six inches in circumference at the middle of the middle phalanx. The palm was tense, swollen, and painful. Photographs 2 and 3, which were taken five days after the operation, show the condition of the dorsal and palmar surfaces. He was anæsthetized, and multiple incisions were made on the dorsal and palmar surfaces of the finger and hand in the direction of the tendons down to the bones. The necrosed tissue was removed and the hand soaked in bichloride-of-mercury solution (1 to 500). The incisions were swabbed with pure carbolic acid, and a large tube was passed from the palmar to the dorsal surface, between the third and fourth metacarpal bones. Iodoform was dusted on, and the hand was dressed with hot antiseptic fomentations and placed on a splint. The constitutional symptoms were treated by a saline purge, light diet, two milk punches a day, quinine sulphate, five grains three times a day, and tincture of chloride of iron, fifteen drops three times a day.

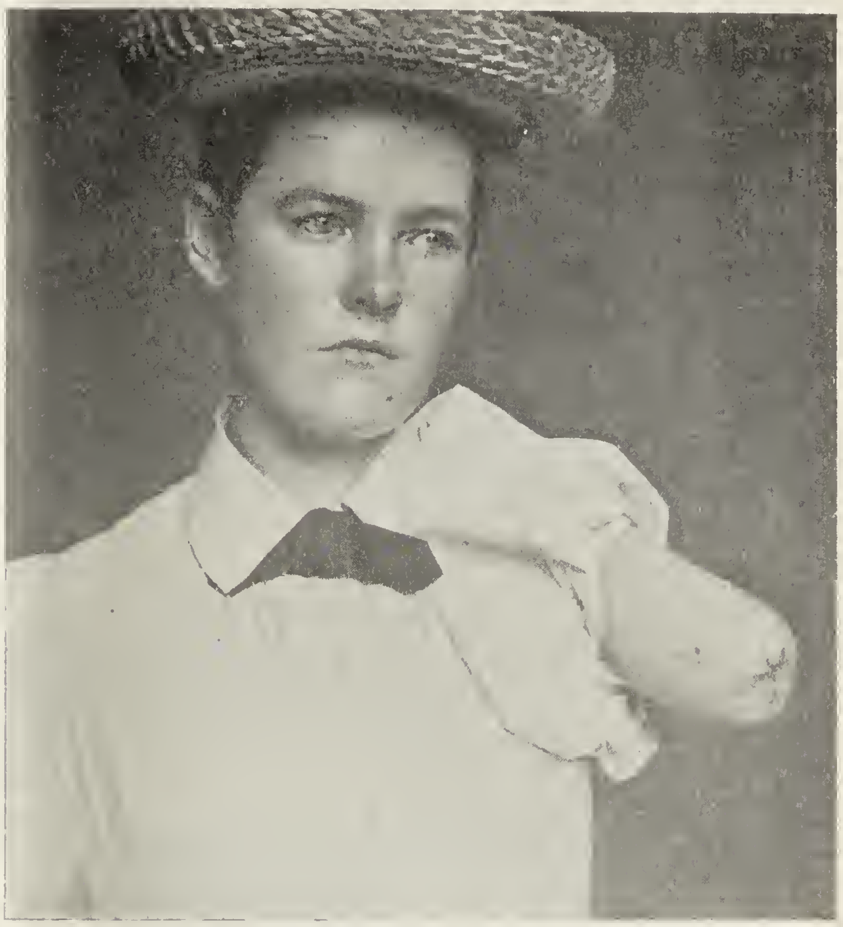


Photograph No. 3, Case VI, dorsal surface.

This patient, after being treated for three weeks, discontinued his visits. When last seen his hand was in good condition. This hand, and particularly the finger, looked hopeless. Through the courtesy of Professor Brinton I operated on a similar case last winter before the clinic at the Jefferson Hospital that made a good recovery, and now has a useful hand.

Case VII.—In April, 1895, J. A., a blacksmith by trade, while at his work received a small punctured wound of his little finger. He paid no attention to it and went on with his work. At the expiration of three days he had a suppurative teno-synovitis, a palmar abscess, and beginning lymphangeitis of the forearm. The abscess was opened by Hilton's method; a counter opening was made above the wrist, and connected with the palmar incision. The hand was soaked in a hot bichloride solution (1 to 1,000), and drained with iodoform gauze passed from the counter opening into the palmar incision. The hand was dressed with a hot antiseptic fomentation, covered with a rubber dam, and placed upon a splint. This man made a rapid recovery with no impairment to the use of his hand.

Case VIII.—In May, 1896, M. M., a woman, applied to the dispensary for the treatment of a sinus which followed an amputation at the middle third of the arm. She said that six months previously she had been pricked in the thumb by a splinter; this was followed by intense pain in the thumb, and to ease it she put on a poultice. Three days later swelling appeared in the palm, and was opened, but in spite of the treatment the infection extended up the arm and her doctor amputated at the middle third to save her life (see Photograph No. 4).



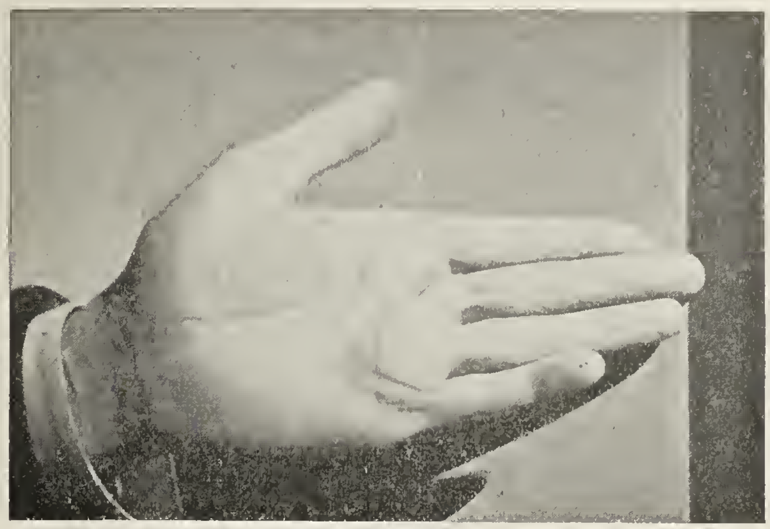
Photograph No. 4, Case VIII.

If one considers the anatomy of the hand, it becomes evident that by the arrangement of the two lateral portions of the palmar fascia wounds of the little finger and thumb must be more dangerous than wounds of the other fingers. The palmar fascia is a common sheath which invests all the muscles of the hand. It consists of a central and two lateral portions. The central portion is triangular in shape; the apex above is attached to the annular ligament. The base is expanded, and opposite the heads of the metacarpal bones divides into four slips for the four fingers. Each slip divides into two processes, which inclose the tendons of the flexor muscles. The tendons with their sheaths and with their slips are attached laterally to the fibrous structures on either side of the metacarpo-phalangeal joints. Opposite the heads of the metacarpal bones there are numerous strong transverse bands which bind the tendons down and at the same time hold down the integument, thus serving to cut off the communication of the three middle fingers with the palm. This is why thecitis in these three fingers is generally arrested at the level of the web. In considering the anatomical relations of the two lateral portions of this fascia we have a different state of affairs. These lateral portions are composed of thin fibrous layers, one going to cover the muscles of the little finger, the other going to cover the muscles of the thumb. These layers practically form drainage-tubes, and are continuous with the palmar and dorsal fascia. There are no transverse bands as in the three middle fingers. By this one can see how easily infection may spread from either the thumb or little finger to the dorsal or palmar surface of the hand by the path of least resistance, and how when once present this hidden enemy will cause widespread disaster if not immediately removed. The diagnosis of this trouble is comparatively easy. There will be a wound on the finger or palm, which may be followed by teno-synovitis; if so, there will be pain and tenderness, with distinct moist crepitus along the tendon sheaths, due to inflammatory roughening. This crepitus will increase as the inflammation decreases, and will decrease as the inflammation increases, because severe inflammation means copious fluid effusion. If it is suppurative, and the lesion is of any of the three middle fingers, there will be pulsatile pain, swelling, and dusky discoloration extending to the lower part of the web, and if of some duration there may be rupture of the integument. If the traumatism is of the thumb or little finger, there will be the same symptoms, but rupture of the integument is rare. There will be intense pulsatile pain in the palm, slight swelling (palmar abscess), and constitutional disturbance. Do not depend upon fluctuation, discoloration, or great tumefaction, as these symptoms are often absent. If this condition is not immediately relieved, the pus will dissect the structure of the palm, and may reach the dorsum, but most probably will work its way beneath the anterior annular ligament of the wrist into the connective tissue of the forearm, and will then spread like wildfire, and a burning sensation, pulsatile pain, swelling, dusky discoloration, and œdema will be prominent. If with this you find small hard, red streaks running up the arm, with enlargement of the associated lymph glands, you may be confident that you are dealing with beginning constitutional sepsis, and, if not acted upon by this time, the patient is liable to lose his arm or life, and it may be both. The very best prognosis will often be that of a useless arm.

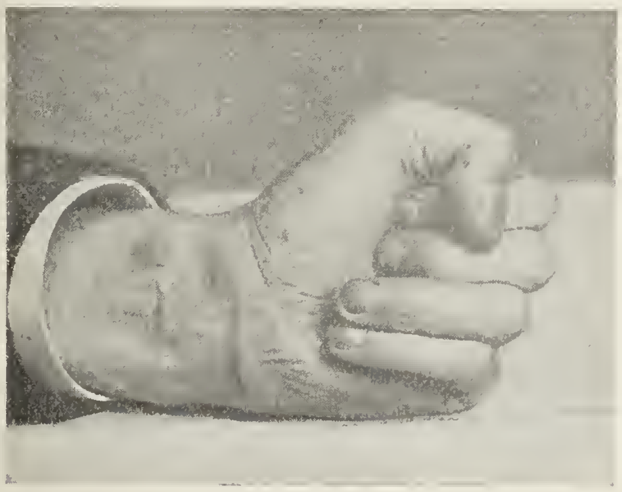
Treatment of Contusions.—Contusion of the hand is best treated as follows: First clean with soap and water, then rub well with soap liniment; if the skin is not broken, apply a number of small pieces of lint saturated with lead water and laudanum. If there are abrasions, wash them with bichloride of mercury (1 to 1,000), cover with wet bichloride gauze, over which put a rubber dam. The dam will not only keep the exposed surface aseptic, but will prevent the absorption of the lead water and laudanum, which must be put on lint and applied after the exposed surfaces have been protected. The hand must be supported on a well-padded palmar splint, with plenty of cotton under the palm, and must be held in place by a firm but not too tightly applied bandage, beginning at the finger tips and extending to the elbow. Bandaging of the fingers is necessary to prevent swelling. Under this treatment any ordinary contusion will moderate in a short time; but if it persists, multiple punctures are employed to relieve the congestion, the wounds are dressed with acetanilide, and an antiseptic fomentation is applied. This is made by wringing out gauze in a hot 1-to-1,000 solution of bichloride of mercury and placing on while hot, covering with rubber dam, and changing often. If the condition assumes a chronic form, with stiffness of the flexors, thickening of the tissues, and pain on motion, employ hot- and cold-water douches night and morning, the water being poured from a distance of three feet, and between the douches use fifteen grains of an ointment composed of two drachms of ichthyol and half an ounce of lanolin. Apply this ointment twice daily. If the contusion is severe, put the patient to bed and immobolize the arm as well as the forearm and hand by applying an internal angular splint. After a contusion watch closely for such sequelæ as sloughing, periostitis, bone necrosis, palmar abscess, and gangrene. If a slough forms, promote the separation of the necrosed tissue, and encourage the vitality of the tissues whose recovery is possible by hot fomentations. When the sloughs are well removed, dress with acetanilide and iodoform (equal parts), and suppress exuberant granulations by removing them with scissors or by applying nitrate of silver. If there are heat and pulsatile pain at the end of a finger, and the pain is increased by motion of the finger, a deep felon should be suspected, and an incision should be made at once to the bone, followed by washing out with bichloride, packing in a small piece of iodoform gauze, applying hot antiseptic fomentations, and putting the finger on a splint. The incision should run in the long axis of the finger and by the side of the tendon. Osteitis or periostitis will be manifested by severe pain, boring or aching in character, deep-seated, and worse at night. Good results can be obtained by applications of lead water and laudanum or inunctions of ichthyol, and rest on a splint. If these means fail, apply equal parts of alcohol and iodine, and cover the part with lint containing a thick layer of unguentum hydrargyri. In severe cases, incising the periosteum to relieve the tension gives good results. If the probe elicits evidence of necrosed bone, open, remove the detached fragments, curette, scour with gauze dipped in hot bichloride solution (1 to 1,000), swab with pure carbolic acid, and dress as usual. Severe pain in the palm should make us suspect a palmar abscess. Do not wait for the cardinal signs of an abscess. The integument is thick, and, as it has between it and the pus the tense fascia, it will not in the majority of cases become discolored. The dense fascia prevents much swelling, and fluctuation does not occur until the abscess is very large. Never treat such a condition with a poultice; open as quickly as possible, irrigate with bichloride (1 to 1,000), pack in a small piece of iodoform gauze, put on hot antiseptic fomentations, cover with wax paper or rubber dam, and put the hand on a splint. In many cases considerable damage has taken place before the surgeon sees the case. There may be an accumulation of pus, which has formed in the palm, traveled up the arm, causing pain, œdema, and discoloration above the annular ligament, with cellulitis of the lower fourth of the forearm and constitutionl symptoms. The patient, after being told of the impending danger, should be anæsthetized, and the pus evacuated by a free opening. An incision running toward the tips of the fingers, beginning at a point below a transverse line from the web of the thumb across the palm, will clear the palmar arches and do little or no harm to the tendons and blood-vessels. This incision just penetrates the palmar fascia. Through this incision introduce a blunt forceps, and force it gently in several directions, retracting with the blades open (Hilton's method). The blunt points will affect a good opening and push aside important structures without damaging them. A counter opening above the wrist should be made and connected with the palmar incision. Irrigate from above downward with bichloride (1 to 1,000), and drain with iodoform gauze passed from the counter openings into the palmar incision. Paint the forearm with alcohol and tincture of iodine, equal parts, cover it above the wound with lint saturated with lead water and laudanum, and keep moist. Dress the entire hand with a hot antiseptic fomentation. Provide rest to the part by placing it upon a well-padded splint.

The constitutional symptoms should be treated by rest in bed, light diet, a saline purge, free stimulation, five grains of quinine a day, and fifteen drops of the tincture of chloride of iron three times a day. If from loss of tissues or gangrene an amputation be demanded, spare as much as possible, particularly of the index finger and thumb. If it is necessary to amputate above the middle of the middle phalanx, the flexor tendon must be anchored to the periosteum, otherwise the extensor tendon will pull the stump directly backward. After an amputation of a finger the fibrous tendon sheath known as the theca must be closed to prevent the transmission of infection. This is best effected by pushing back the periosteum for a distance of an eighth of an inch and passing catgut sutures vertically through the theca and the periosteum. In a workingman avoid, if possible, cutting off the head of a metacarpal bone, as it weakens the hand. Sew the flaps with few stitiches, so as to allow drainage between them. Most of the bad results so often seen following amputation of the fingers are due to the nonclosure of the theca and an excessive number of stitches in the flaps.

Incised Wounds.—Incised wounds are the most common but the least dangerous injuries, as the free bleeding washes out most of the infectious material. Union by first intention should be sought for; in the majority of cases this can be accomplished by thoroughly scrubbing the parts with soap and water, following with the free use of bichloride (1 to 500), and follow this by lukewarm boiled water, dusting with acentanilide, sewing with as few stitches as possible, dressing with bichloride gauze (moist), covering with rubber dam, and putting the hand on a splint. Not a few of these cases are complicated by severing of the tendons and a severe hæmorrhage. If the tendons be cut, make the part bloodless, approximate the ends, and sew them with a curved needle threaded with fine silk. Photographs 5 and 6 show extension and flexion of the same hand, which followed suturing the flexor tendon of the little finger; this tendon was divided in an accident and was sutured by Dr. J. Chalmers Da Costa.



Photograph No. 5.



Photograph No. 6.

If the wound is not very recent, and the tendons are contracted to such a degree that it is found impossible to bring the ends together, then resort to Czerny's method of tendon lengthening. If the gap can not be satisfactorily filled by a portion of the divided tendon, bridge over with catgut or graft in a tendon from the lower animals. If a flexor tendon of the wrist is cut, it is with difficulty that the proximate end is isolated, owing to its retraction. This can be accomplished in some cases by flexing the finger of the cut tendon and extending the rest (*Manual of the Modern Surgery,* J. Chalmers Da Costa). If only one end can be found, stitch it with fine silk to the nearest tendon of like anatomical function. After suturing tendons, dress with gauze and apply plaster of Paris. The finger of the cut tendon should be partly flexed, the others extended. Passive motion should be begun after two weeks.

Lacerated Wounds.—Lacerated wounds require a thorough scrubbing with Johnson's ethereal soap, followed by immersing the hand into bichloride (1 to 1,000), and scrubbing with a brush while the hand of the patient is in the solution. Suture the tendons, ligate the bleeding vessels, and with a pair of scissors trim the edges and treat the case as an incised wound, immobilizing on a splint if the wound is slight, but confining the patient to bed if the wound is severe.

Punctured Wounds.—Punctured wounds are the most dangerous, since infection is almost inevitable. They should be incised to the very bottom the moment they are seen. Foreign bodies should be removed, free bleeding encouraged, and the wound should be syringed out with peroxide of hydrogen, followed by bichloride (1 to 500), then dusted with acetanilide, and drained with iodoform gauze. If the wound is inflamed, accompanied by a cellulitis of the adjacent parts and lymphangeitis of the forearm, it should be opened, curetted, swabbed out with pure carbolic acid, and drained with iodoform gauze. The cellulitis should be treated with alcohol and iodine, equal parts, applied locally, and covered by lint saturated with lead water and laudanum. If there is no response to this treatment, multiple incisions should be made.

Hæmorrhage.—Contused, lacerated, and punctured wounds are accompanied by very little hæmorrhage, unless the palmar arches have been severed. Incised wounds bleed freely. Bleeding from the digital vessels can be controlled by a dressing held in place by a firm bandage extending from the tips of the fingers to the web and ending by a figure eight of the wrist and root of the finger. The interosseous arteries should be ligated when they bleed. If necessary, enlarge the primary incision; a small semicurved needle, threaded with moderately fine catgut, should be passed above and below the bleeding point and the ligature tied. In the majority of cases this will arrest the hæmorrhage; if it does not, then try hot water, 120° to 130° F., followed immediately by a graduated compress of iodoform gauze, over which place a small pad; put a gauntlet on the hand and bind firmly to a well-padded palmar splint. The ends of the fingers should be exposed to ascertain the condition of the circulation. The dressings should be changed and the packing removed at the end of three days, when the splint may be omitted, unless the original traumatism counterindicates it. Hæmorrhage from the palmar arches is troublesome and dangerous. Under no circumstances should styptics be applied to check the bleeding. Professor Keen reports a case, in the *Annals of Anatomy and Surgery*, Brooklyn, 1888, vol. v, in which an aneurysm of the superficial arch, of the size of a cherry, formed, following a traumatism. The physician in charge injected ten drops of undiluted Monsel's solution into the sac. As soon as this was injected the whole hand became blanched, and soon well-marked gangrene followed. It was necessary to amputate above the wrist. In the *Philadelphia Medical Times*, September 10, 1881, p. 795, is related a case in which a few drops of nitrate of silver injected into a nævus caused gangrene of two fingers. The same styptics applied to open wounds of the arch might produce the same results. If the blood is bright red, and comes out in jets in the vicinity of a transverse line running across the palm from the root of the thumb while hyperextended, hæmorrhage from the superficial arch should be suspected. An Esmarch elastic bandage or something equivalent should be applied to allow a dry dissection. The primary wound is then to be enlarged, and on a line with the arch the divided ends are found and are to be tied with silk ligatures. A blunt-pointed instrument should be used in the dissection to avoid injuring the divisions of the median and ulnar nerves which lie beneath the arch. The deep palmar arch when divided bleeds profusely. The divided ends should be sought for even by an extensive dissection, if necessary, before ligating the radial and ulnar arteries. The Esmarch bandage will be of great assistance. A good method for gaining access to the arch is to make a skin flap with its convexity downward, starting over the middle of the shaft of the metacarpal bone of the thumb, running downward and inward, keeping a quarter of an inch above the line of the superficial arch and ending on the ulnar side of the hand an inch below the pisiform bone. This will also give access to the superficial arch. Dissect this flap upward for an inch and a half and ample room will be afforded to work with a blunt instrument. The tendons should be drawn to the sides by small blunt retractors. If the original injury has not opened widely the palmar fascia, this should be done by a blunt pair of scissors and the margins drawn to each side. An assistant now relaxes the Esmarch bandage and by the bleeding the exact site of the vessels may be seen. Both ends of the arch should be ligated with silk. J. Chalmers Da Costa has suggested that the arch might be ligated readily by the incision that Mynter employs in resecting the wrist, that is, an incision separating the metacarpal bones and the bones of the carpus. If this does not control the hæmorrhage the ulnar and radial arteries must be ligated in the lower third of the forearm. It may in rare cases, especially in secondary hæmorrhage, be necessary to ligate the brachial just above the bend of the elbow or to amputate above the wrist. In 1893 Professor Brinton had under his care at the Jefferson Hospital a patient who received a lacerated wound of the palm and a laceration of the deep palmar arch. The graduated compress failed to restrain the hæmorrhage. Ligation of the radial and ulnar arteries failed. Ligation of the brachial artery at the bend of the elbow failed. Amputation of the hand was necessary.

The photographs used in this article were taken by Dr. T. G. Buchanon.

No. 1838 CHRISTIAN STREET.

THE
PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from page 151.*)

Part V.

Of the large number of operations it was my good fortune to see performed at the hands of the most skilled operators abroad, I would like to detail a few which impressed me as being particularly interesting or instructive. And I propose to describe the operations I saw at the several cities *seriatim*, as I believe in that way the best idea of the methods employed by the different men can be gained.

Case I. *Epithelioma of Cervix.*—(Kümmell, Hamburg.) It was a rather far-advanced case. An examination under ether two days previously had shown the uterus to be freely movable. The diseased tissue had been scraped away with a sharp spoon, and the Paquelin applied. Kümmell determined now to do a vaginal hysterectomy, using the cautery instead of knife or scissors, so as not to open up new channels for infection. The vagina was small and firm; hence an incision was made on the left side of the vulva downward and outward through all the tissues, including the mucous membrane of the vagina. There was considerable hæmorrhage from this incision; the bleeding vessels were clamped separately, and tied with silk. Considerable room was gained by this incision. The uterus being steadied with claw hooks, Kümmell proceeded with the Paquelin to free the cervix from the vagina. The bladder reached far down on the anterior vaginal wall, and at one place it was injured by the cautery, urine escaping into the vagina. After considerable difficulty, owing to the infiltration of the parametria (Kümmell here said that he would not have done a hysterectomy had he known there was so much infiltration, but he was deceived by the apparent mobility of the uterus), the uterus was freed with the cautery on the left side, and could be drawn down into the vagina. The left tube and ovarian artery were now clamped off close to the uterus, and severed from it with scissors. A similar proceeding was resorted to on the right side, and the remaining tissues were severed with the Paquelin. The two clamps were left *in situ.* Both ovaries and tubes, which were small and atrophic, the patient being about fifty years old, were left in place. The hole in the bladder, as well as the external lateral incision, were closed with silk. A strip of iodoform gauze was introduced alongside the clamps. The whole operation lasted an hour and a half. Kümmell assured me that he had done the same operation, with little or no hæmorrhage, in half an hour. He only does this operation in advanced cases of carcinoma, where the uterus can not be well pulled down. Where it can be pulled down, Kümmell always does a vaginal hysterectomy with clamps, leaving them in place after the operation.

Case II. *Large Hæmatoma extending to the Umbilicus.*—(Prochownick, Hamburg.) I saw the woman two weeks after the operation. She was forty-six years old, and the hæmatoma had appeared suddenly after a long period of sterility. Prochownick had incised the vagina and the hæmatoma between the uterus and bladder as it lay lowest there, although he was somewhat afraid of wounding bladder or ureters. A small drainage-tube leading up about two inches and a half on the left side of the cervix was still in place. The sac had almost disappeared.

Case III. *Complete Laceration through the Perinæum into the Rectum.*—(Prochownick.) Prochownick operated with submucous injections of cocaine and morphine; no general anæsthetic is employed if the patients are willing to stand a little pain. Catgut is used throughout. Prochownick prefers not to give a general anæsthetic, especially where the gut must be repaired; the subsequent vomiting and consequent liability of some of the ligatures to give way are avoided thereby.

Case IV. *Chronic Gonorrhœal Endometritis.*—(Leopold, Dresden.) In speaking of gonorrhœa, Leopold emphasizes the fact that the cocci also enter the rectum. Old cases frequently complain mostly of rectal symptoms. On examining *per vaginam,* one feels only a few adhesions, the remnants of a former infection, and thinks it scarcely possible that the rectal symptoms can come from the same cause. On examining *per rectum,* however, one feels, at the height of the third sphincter, a circular hard band, which is the result of a periproctitis dating from a former infection. Leopold maintains that the germs can go through the wall of the uterus into the periproctitic tissues.

For chronic gonorrhœal endometritis Leopold recommends, first, a two-per-cent. soda solution to dissolve the thick mucus; secondly, a two-per-cent. nitrate-of-silver solution, or dilute nitric acid, applied to the endometrium once a week; thirdly, concentrated nitric acid applied to the erosions on the cervix caused by the gonorrhœal discharge. He warns against the use of the tincture of iodine. Some cases only recover after prolonged rest in bed, careful attention to food and bowels, and Priessnitz applications to the abdomen.

Case V. *Lateral Incision of Perinæum.*—(Leopold.) The patient was a primipara suffering from eclampsia. The pelvis was a justo-minor one; the cervix was fully dilated. The position was L. O. A., and forceps were applied. When the head was almost on the perinæum a fairly deep incision was made with scissors on the left side, the mucous membrane of the vagina being also divided. The head was then extracted, and the child delivered. Before the placenta was delivered the incision was closed with four silk sutures. The incision had been made before there was any tension on the perinæum. This lateral incision is often resorted to by Leopold in primiparæ, even when forceps are not applied.

Case VI. *Ectopic Gestation.*—(Leopold.) Leopold made his diagnosis from the history and from the physical signs. There was a very tender mass to be felt on the right side of the uterus, and the breasts secreted. Leopold makes a very strong point of this latter fact. Too often, he says, is the intimate relation existing between the uterus and the breasts through the sympathetic system overlooked. The patient was placed in Trendelenburg's position, Leopold standing on her right side and incising the abdominal wall from the umbilicus toward the symphysis. As soon as the peritonæum has been cut, he fastens it to the skin by a suture on each side. These sutures are left long and used as retractors. Then the peritonæum is slit wide open above and below the seat of these sutures. On opening the peritonæum fresh hæmorrhage was noticed coming from the wall of the sac. This was stopped with the Paquelin cautery. The right tube and ovary, together with the sac, were tied off with two medium silk ligatures and severed with the cautery.

The left tube and ovary, which were evidently the seat of a chronic inflammation, were tied off in like manner and also removed with the cautery. During the operation the instruments lay in a tray on a moist sterilized towel, but not in any solution. A number of needles were threaded before the operation, and kept lying in a soda solution, and two needle-holders were in use, thus saving time.

Case VII. *Unilateral Salpingo-oophoritis.*—(Leopold.) The patient, a young girl, had complained for some time of severe pain on the left side. Cœliotomy showed a congested, thickened tube, which seemed partly or entirely occluded at one point. Both ovary and tube were bound down by adhesions, which, however, could be freely broken down. Leopold hesitated whether to remove the ovary and tube or not; he finally decided to remove them. After the operation the secretion in the tube was stained with methylene blue and found to contain gonococci.

Case VIII. *Parovarian Cyst on the Left Side.*—(Leopold.) Although there were no adhesions, the incision reached from the umbilicus almost to the symphysis pubis. The cyst was tapped with a trocar and cannula, to the side of which a long rubber tube that reached to the floor was attached. After most of the fluid had been withdrawn in this way, the opening in the cyst wall was closed with two flat Hegar clamps. Leopold is always careful to have as little cystic fluid as possible get into the peritoneal cavity. He maintains that the peritoneal cavity is often inoculated in this way, and that one can never tell whether a cyst is benign or not until examined carefully. The pedicle of the cyst was tied with two medium silk ligatures close to the ovary, and the pedicle was burned through with the Paquelin, thus removing the cyst, but leaving the ovary and tube. It was then noticed that in the stump left attached to the ovary there was part of the wall of the cyst, and the stump was accordingly thoroughly cauterized with the Paquelin, but the ovary was not removed.

Leopold holds that cystosarcoma and cystocarcinoma of the ovary are almost always bilateral, and benign cysts almost always unilateral. In all ovarian cysts he gives a guarded prognosis, and examines the wall of the cyst microscopically.

In young persons where there is a history of severe pain, malaise, and *vomiting* during menstruation, Leopold says he has frequently found an ovarian cyst, with torsion of the stump. During menstruation the cyst is congested, the congestion goes on to inflammation and causes a local, though benign, peritonitis. Hence the vomiting and other symptoms during menstruation.

Case IX. *Prolapse of Uterus, with Hypertrophied Cervix.*—(Leopold.) The hypertrophy of the cervix was enormous, and there was a very extensive cystocele, as well as a moderate rectocele.

A partial amputation of the cervix was performed by wedge-shaped incisions. This reduced the size of the uterus materially. A large oval flap was dissected off the anterior vaginal wall, and the denuded area closed with interrupted silk sutures. Then a posterior colporrhaphy was done. Leopold does not do ventrofixation in these cases. He maintains that diminishing the weight of the uterus by amputating the cervix, and doing large plastic operations on the anterior and posterior vaginal walls, are sufficient to keep the uterus in place.

Case X. *Complete Laceration of the Perinæum through the Sphincter Ani into the Rectum.*—(Leopold.) Before all vaginal operations Leopold introduces a cotton plug, lubricated with vaseline and attached to a silk ligature, into the rectum.

A denudation was made of the shape shown in Fig. 1.

A, B, F, D, E, C represents the denuded area. The sutures introduced and the sphincter ani are shown. At A, which is the crest of the denudation, a claw forceps was attached and pulled upward. The area A, B, C was first brought together by the silk sutures 1 to 6, each one of which was tied as soon as it had been inserted. The area then still left denuded is B, F, D, E, C. This is shown in Fig. 2, drawn on a larger scale than Fig. 1. The next step of the operation consists in closing the rectal tear and bringing together the fibres of the sphincter ani. This was done by beginning with sutures on the left side, piercing the mucous membrane of the rectum at the uppermost part of the tear into the rectum, coming out into the denuded area on the posterior vaginal wall, crossing to the right side of this, and then again piercing the mucous membrane of the rectum, this time on the right side. The pelvis was raised on a small cushion to aid this manipulation. In this way the sutures 7 to 12 of fine silk were inserted and left hanging out of the anus. The sutures 10 to 12 brought the ends of the sphincter ani together. The denuded area now still remaining is quadrilateral in shape; it is the area B, C, E, F shown in Fig. 3. Three deep tension sutures, 13, 15, and 17, and three superficial ones, 14, 16, and 18, were inserted and tied, and the operation was completed.

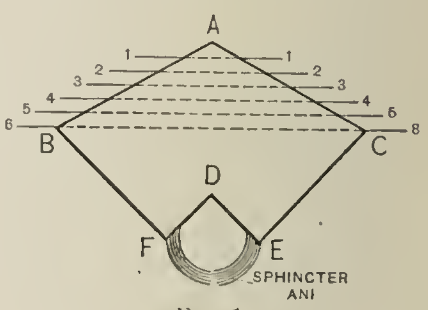


Fig. 1.

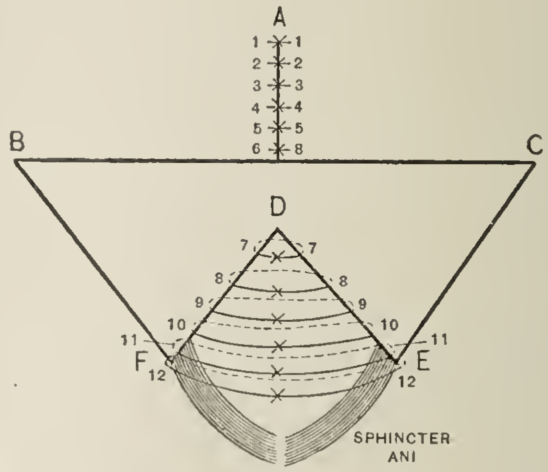


Fig. 2.

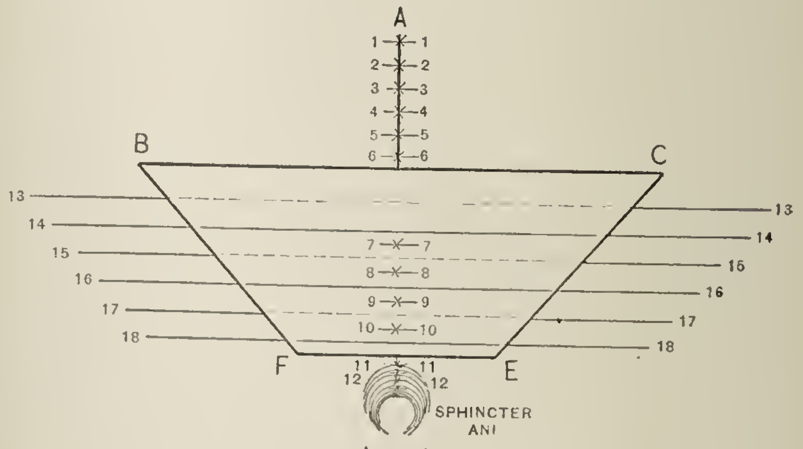


Fig. 3.

Leopold worked very rapidly, the whole operation lasting only forty minutes. These cases are kept on tea, coffee, bouillon, and beer (no milk) for twelve days; then the bowels are moved for the first time. Though hardly in keeping with the teachings of modern rectal surgery, Leopold says he gets a good result in all such cases.

CASE XI. *Multiple Cysts in Anterior Vaginal Wall; Cystocele; Rectocele; Slight Laceration of the Perinæum; Hypertrophy and Cystic Degeneration of the Cervix.*—(Leopold.) The cysts in the anterior vaginal wall were first incised. They formed a chain communicating with one another from near the meatus, anteriorly, to the anterior fornix of the vagina, posteriorly. A wedge-shaped excision of both lips of the cervix was then performed. The cyst walls were next excised, and at the same time an oval denudation of the anterior vaginal wall was done. This was closed in the usual way. Then Leopold did a colpoperineorrhaphy, making use of a triangular denudation, the base of the triangle being at the perinæum, the apex at the crest of the rectocele. Only silk was used as suture material.

CASE XII. *Beginning Epithelioma of the Cervix.*—(Leopold.) The patient was a woman fifty years of age. Menstruation had ceased for several months, then began again irregularly, often profusely, the patient finally becoming very anæmic. For several weeks past there was a fœtid discharge from the vagina. On the left side of the anterior lip of the cervix there was a small ulcerated mass that bled readily. Vaginal hysterectomy was determined upon. With the Paquelin the cervix was freed circularly from the vagina, and the bladder and rectum pushed upward with the finger. Douglas's *cul-de-sac* was then opened with the scalpel, and one ligature was applied low down on the left side, including some branches of the uterine artery. A similar ligature was applied on the right side. With scissors Leopold then cut between the cervix and the ligature on the right side. Then he applied another ligature on the right side just above the seat of the first one, and again divided the tissues tied off. Now a ligature included the right uterine artery, then the right tube and ovarian artery were tied and cut. Then with a claw hook the fundus uteri was brought out into the vagina anteriorly. Then successively ligatures were applied to the left tube with the ovarian artery, and the left side of the uterus was tied off in a similar way to which the right had been, beginning above instead of below. Medium silk was used throughout; sometimes it was employed double. About twelve ligatures were used in all, and there was little or no hæmorrhage. The anterior and posterior flaps of peritonæum, which had each been secured by a silk ligature, were now united with a few silk ligatures, leaving only the two stumps and their ligatures protruding into the vagina laterally. The ovaries and tubes were not removed. The vagina was packed with sterile gauze. The operation lasted forty minutes.

CASE XIII. *Intraligamentous Cyst on Right Side, with a Small Parovarian Abscess Adherent to it.*—(Leopold.) On opening the abdomen the cyst was found to be about the size of a small child's head; besides the abscess, several coils of small intestine were also adherent to the cyst. The first step of the operation consisted in evacuating the cyst with a trocar and cannula. On attempting to loosen the adhesions the abscess ruptured. The patient was quickly turned on the right side, the pus was wiped away, the cyst and the abscess cavity were packed with sterile gauze and sewed into the abdominal wound, the gauze protruding from the lower angle of the wound. Leopold was afraid of infecting the peritoneal cavity with this pus. Microscopic examination afterward failed to show the presence of any bacteria except a few small diplococci, which were probably old gonococci. Although frequent attempts were made to obtain cultures from this pus they proved unsuccessful.

CASE XIV. *Gonorrhœal Endometritis.*—(Credé, Dresden.) The patient came to the hospital two weeks before with a profuse yellow discharge, which was found to contain gonococci. A twenty-per-cent. suppository of citrate of silver, commercially known as "itrol," in cocoa butter was introduced into the uterus three times during the two weeks. The discharge, which was now very slight, consisted only of clear mucus, and there were no more signs of irritation. This citrate of silver is the same material which has already been described.

CASE XV. *Ileus Ten Days after Cœliotomy; Secondary Cœliotomy; Recovery.*—(Sänger, Leipsic.) Sänger had removed a right-sided pyosalpinx through the abdomen ten days before. The omentum at that time was found adherent to the right side of the bladder, and had contained a small abscess. After the removal of the pyosalpinx the omentum (with the abscess) had been resected, and the abdomen closed without drainage. The bowels were moved on the third day; flatus came away frequently, and the bowels moved regularly until the seventh day. Up to this time there had been no rise of pulse or temperature, and no pain. After the seventh day the bowels no longer moved, in spite of high enemata and cathartics. There was increasing pain, limited to the right side. Tympanites over the whole abdomen began to manifest itself. The pulse became progressively more rapid; there was increased restlessness; vomiting set in, and soon became almost incessant, but not fæcal in character. The temperature rose above 101° F. The whole clinical picture was that of a typical intestinal obstruction. Sänger reopened the abdomen very quickly. The abdominal wound had completely healed, neither were there any signs of infection in the peritoneal cavity. The omentum was found tightly adherent to the stump on the right side, and a loop of intestine was completely occluded by these adhesions. The adhesions were quickly severed and the omentum resected high up. The abdomen was then rapidly closed. The whole operation had only lasted a few minutes. Immediately after the operation the pulse began to improve, and the bowels moved ten hours later. The next day the pulse and temperature dropped to normal, and the further recovery of the patient was uneventful.

At a meeting of the Leipsic Obstetrical Society, which I was enabled to attend through Sänger's kindness, a paper was read by Graefe, of Halle, on the subject of Ileus after Cœliotomy. Graefe reported two cases, one after removal of a pyosalpinx, the other after a vaginal hysterectomy. In both cases a secondary cœliotomy had been resorted to, and both ended in recovery. In each case two coils of intestine were found agglutinated, so that a "kinking" of the gut resulted. The question of using dry or moist gauze sponges in the peritoneal cavity then came up. Some maintained that the dry gauze irritated the peritonæum and caused abrasions, with subsequent adhesions and tendency to the formation of an ileus. Sänger and Döderlein were in favor of using the gauze moist, Zweifel and Graefe preferred it dry.

Case XVI. *Laceration of Perinæum through Sphincter Ani and One Inch up the Rectum.*—(Sänger.) The cicatricial tissue was excised. A few fine silk sutures were inserted at the apex of the denudation on the posterior vaginal wall and tied. Then with gut silk the rectum was sewed, care being taken not to include the mucous membrane in the sutures. These sutures were cut short. Then the ends of the sphincter ani were united by a few fine silk sutures. Two catgut sutures (all others being of silk) were then inserted into the denuded area left, to diminish its size. The thighs were now brought together. Three heavy and several finer silk sutures were now introduced and tied. They covered the silk sutures that had closed the rectum, as well as the two catgut sutures, and at the same time closed the denuded area left. The closed wound, both perineal and vaginal, was covered with iodoform collodion, and some powdered iodoform was dusted on. A small gauze tampon was inserted into the vagina. The after-treatment consists in strictly fluid diet. No opium is administered, but a cathartic on the fourth or fifth day.

Case XVII. *Carcinoma Uteri Corporis.*—(Sänger.) The diseased tissue was scraped away very carefully, as the wall of the uterus was very thin in one place. In spite of the fact that the uterus could not be drawn down well, Sänger laid the case before the patient's husband, warning him of the bad prognosis. The latter, however, desired that the operation be done, and Sänger proceeded to remove the uterus. The skin of the buttocks, vulva, and lower part of the abdomen was scrubbed. The vagina was scrubbed with soap and water, then irrigated with sublimate, and lastly with lysol. The cervix was steadied with two bullock forceps, and with the Paquelin it was freed all around. The bladder and rectum were pushed up out of the way, and Douglas's *cul-de-sac* was opened with the finger. There were many adhesions posteriorly, which were broken down with difficulty. The uterus could neither be drawn downward nor backward. Sänger then opened the anterior *cul-de-sac*, and found the uterus firmly adherent there, and it could not be freed entirely. He then slit up the anterior wall of the uterus, beginning at the cervix, grasping each side with a bullock forceps, pulling the uterus downward as far as possible by means of these, and then splitting the anterior wall a little further up. In this way he gradually worked his way up to the fundus. He then applied a clamp to the right tube, and severed the uterus from the tube. Then another clamp was applied on the right side lower down and the tissues were grasped and divided with scissors. A third and a fourth clamp were applied in the same way, and the right side of the uterus was freed. The left side was treated in the same way, and the uterus was cut away. A case presenting greater technical difficulties could hardly have been found, and yet the hæmorrhage was trifling. No clamps were applied until the right tube and ovary were grasped. A strip of iodoform gauze is inserted alongside the clamps. The latter are generally removed after forty-eight hours.

Case XVIII. *Anterior and Posterior Colporrhaphy.*—(Sänger's method.) Anterior Colporrhaphy: The anterior and posterior limitations of the proposed denudation were marked by silk sutures, which were left long and used as tenacula. The mucous membrane of the vagina was incised in the median line between these two sutures. The flap to the right of this incision was liberated about a fourth of an inch and grasped with several artery forceps. Then with two fingers covered with gauze the bladder was pushed upward away from the vaginal mucous membrane. In this way a large flap of vaginal mucous membrane was formed on the right side. Occasionally the scalpel aided with a small cut. Then the same thing was done on the left side of the median incision. Now the two flaps of vaginal mucous membrane were cut off, and a very large denuded surface presented itself. This was closed with interrupted fine silk sutures, two being buried.

Posterior Colporrhaphy: A silk suture was inserted at the crest of the rectocele and left long as a tenaculum. The index finger of the left hand, covered with a sterilized rubber finger, was inserted into the rectum. An incision was again made in the median line, beginning at the crest of the rectocele. The mucous membrane was liberated a little to the right of the incision and grasped with several artery forceps. The rectum was pushed away from the vagina in the same way the bladder had been. Then the same thing was done on the left side of the median line, the scalpel assisting where necessary. When the flaps were considered large enough —*i. e.*, when the denudation under them was considered of the right size—the flaps were cut away. An incision was now made through the skin on each side of the posterior commissure, and the ends of these incisions joined with the ends of the denuded areas by incisions. The whole denuded area was then of the shape shown in the accompanying figure.

At A is the crest of the rectocele. Beginning here, interrupted fine silk sutures were applied, as usual, until the area A, B, B′ was closed. Then the points 1, 1′–2, 2′–3, 3′–4, 4′ were joined by four interrupted fine silk sutures that were passed only through the mucous membrane of the vagina. In this way the introitus was formed, the posterior wall of the vagina being lifted well anteriorly. There now remained an irregular quadrilateral raw surface, with quite a deep pocket behind and below the newly made posterior vaginal wall. To obliterate this pocket, and to bring the raw surface left more into one plane, two catgut sutures were introduced into the pocket, tied, and cut short. The area now remaining is, roughly, that designated B, D, D′, B′, it being remembered that B, C and B′, C′ are the edges of the mucous membrane, and that on a plane posterior to this there is still a denuded area. Interrupted silk sutures were now successively introduced and tied, thus completing the operation. The uterus was now well up in place, and the vagina barely admitted two fingers. Sänger has been using this method in his plastic work for several years with very satisfactory results. He published it in the report of the German Gynæcological Society held at Breslau in 1892.

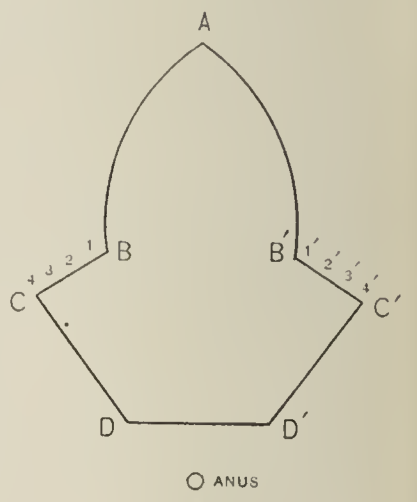


Fig. 4.

Case XIX. *Advanced Epithelioma of Cervix.*—(Winter, Berlin.) With the Paquelin the carcinomatous area was thoroughly cauterized. Then the hands of operator and assistants, as well as the vagina, were again disinfected. The cervix was freed all around with a scalpel; the bladder and rectum were pushed up out of the way. The posterior *cul-de-sac* was now opened with scissors, the tissues being put on the stretch with thumb forceps. There were adhesions on the right side of the uterus, so Winter proceeded to tie off the left side first. The first ligature was applied low down on the left side, and the tissues tied off were divided between the ligature and the uterus. Then, successively, ligatures were applied higher up on the same side, and the tissues tied off divided with scissors. Then the left tube and ovarian artery were tied off, and the left side of the uterus was free. A loop of small intestine was found adherent to the fundus uteri; the adhesions were severed, and the gut kept out of the way with a gauze tampon. Then, beginning above on the right side, ligatures were applied in a similar way until the uterus was freed. About twelve catgut ligatures were used in all. In tying his ligatures Winter uses one double loop and two single loops on top of that. Now a catgut suture was inserted through the anterior vaginal wall on the left side, the anterior flap of peritonæum, the left uterine stump, the posterior flap of peritonæum, and the posterior vaginal wall. A similar suture was inserted on the right side. Then a suture was inserted between these two in the middle line, passing through the anterior vaginal wall, the anterior flap of peritonæum, the posterior flap of peritonæum, and the posterior vaginal wall. These three sutures were tied, and the peritoneal cavity was thus shut off completely from the vagina. A small iodoform-gauze tampon was inserted into the vagina. An ordinary Deschamps's needle was used to insert the ligatures.

Case XX. *Epithelioma of Cervix.*—(Ohlshausen.) No towels are placed over the patient, but the vulva, lower part of the abdomen, buttocks, and thighs are prepared as if for an operation on these parts. No sound is introduced into the bladder to see how far down it reaches, but after the operation is over the woman is catheterized to see if the bladder is intact. The cervix was freed with the scalpel, which caused considerable hæmorrhage, and several vessels had to be clamped. Still there was a disagreeable oozing going on during the whole operation from the cut vaginal wall. Where the Paquelin is used this is obviated. The posterior *cul-de-sac* was opened with scissors, the parts being put on the stretch with thumb forceps. The anterior *cul-de-sac* was then opened. Two ligatures were applied to each side low down; they controlled what hæmorrhage there was from the uterus. Then ligatures were applied successively upward on the left side, the left tube was tied off, then the right tube, and then downward on the right side. About fourteen catgut ligatures were used in all; they were introduced with a swan-necked Ohlshausen "Deschamps." Then with a continuous catgut ligature the two vaginal walls, the two flaps of peritonæum, and the two stumps were sewed together, thus shutting off the peritoneal cavity completely. Iodoform powder was blown on to the stumps, and a small tampon of iodoform gauze was inserted into the vagina.

Case XXI. *Prolapse of Uterus, with Hypertrophied Cervix, Extensive Cystocele and Rectocele.*—(Winter.) A large oval denudation was made anteriorly, beginning near the meatus urinarius and extending almost to the *os uteri.* The upper angle of the mucous membrane of the vagina was freed with the scalpel. It was then grasped with a flat cyst forceps held in the left hand. The right hand held a gauze sponge, with which the mucous membrane was peeled off more and more from the underlying tissues. When necessary, the scalpel helped to free the mucous membrane where it was too tightly adherent to be peeled off bluntly. This is similar to the method pursued by Sänger in his denudations. The bladder is continually pushed up out of the way during the denudation. Then the peritonæum is opened behind the bladder. Two provisional catgut ligatures were inserted into the anterior wall of the uterus to enable it to be drawn forward. A silkworm-gut suture is now inserted on the left side, a little above the middle of the denuded area, close to the border of the mucous membrane, but not including it. This suture is then passed through the anterior wall of the uterus near the fundus (as in doing a cœliohysterorrhaphy), and then into the right side of the denuded area corresponding to its insertion on the left side. A second silkworm-gut suture is applied in a similar way a little below the first. These two sutures are tied and cut short—thereby the uterus is fastened to the anterior vaginal wall. The provisional catgut ligatures which were used as tenacula are removed, and the anterior denudation is closed with catgut sutures, the mucous membrane of the vagina covering the two silkworm-gut sutures. A wedge-shaped excision of the anterior lip of the cervix was then done, followed by a colpoperineorrhaphy with interrupted catgut sutures, some being buried. Winter depends on the large anterior denudation and the vaginofixation more than on the colpoperineorrhaphy to cure these cases.

Case XXII. *Small Uterine Fibroid and Cystic Ovary.*—(Mackenrodt, Berlin.) The patient was a woman forty-eight years old. She had been treated with ergotin injections, but the hæmorrhage and pain continued. Accordingly, Mackenrodt decided to do a vaginal hysterectomy. The vagina, vulva, lower part of abdomen, and inner side of thighs were carefully scrubbed with soap and water, then alcohol was used, and lastly, corrosive sublimate. The first step of the operation consisted in opening the posterior *cul-de-sac* with curved scissors. Then with catgut and a sharp, curved needle a ligature was applied low down on the left side, the needle being passed, reversed, and returned before the ligature was tied. Catgut was used throughout the operation, as was the sharp, curved needle and an ordinary needle-holder. The needle is reversed and again passed through the tissues to be tied off, so as to prevent slipping of the ligature. Mackenrodt assured me that he had never seen a ligature passed in this way slip. He passes all his ligatures, both in doing a vaginal, as well as an abdominal hysterectomy, in this way. After applying this first ligature on the left side he cut between it and the uterus, and applied a similar one a little higher up. Then a third one was applied on the left side, and three similar ones on the right side, the uterus each time being freed a little more. Now, with a scalpel, the cervix was freed anteriorly, the bladder was pushed up out of the way, and the peritonæum opened anteriorly. Ligatures were then applied as before up to the tube, which, with the ovarian artery, was clamped and separated from the uterus. Then ligatures were likewise applied upward on the right side up to the tube, which was clamped as on the opposite side. The uterus was then cut away. Now the tubes and ovaries, both of which were cystic, were tied off with catgut ligatures applied as above. About fourteen ligatures were used in all. The uterine stumps were then pulled well down into the vagina, and the peritoneal flaps united behind them with a few catgut ligatures. A strip of iodoform gauze was inserted into the vagina. Mackenrodt says there is a copious secretion from the stumps in the vagina for twenty-four to thirty-six hours.

(To be continued.)

A CASE OF
ULCERS FROM AN EXTENSIVE BURN TREATED WITH BOVININE.

By F. R. BLANCHARD, M.D.,
LAKEVIEW, MICH.

On the morning of April 28, 1897, I was called to see W. T. B., aged forty-three years, engineer in a stave factory, who had been injured by the explosion of the mud drum. I saw him an hour after the accident and found him suffering intense pain, and wildly delirious.

Whisky had been administered to overcome the shock, and three eighth-of-a-grain morphine pills to relieve the pain. I immediately gave a hypodermic of morphine, a quarter of a grain, and atropine, one one hundred and fiftieth of a grain, which soon quieted him, and then examined his injuries, finding the following conditions: Upper extremities severely burned about the face, neck, and upper portion of the chest, the left eye, ear, and nose being most severe; left arm, at elbow, wrist, and entire hand; right arm, at wrist. Lower extremities: right buttock over one half of the surface; right leg on the patella, calf, and ankle; left buttock, thigh, and leg, over the whole posterior surface, patella, and a strip two inches wide running nearly around the ankle.

The burns were all of the second degree and healed without sloughing, except on the left calf and ankle.

The appearance of the left eye was bad, the cornea being cloudy, and my prognosis was guarded, but the eye afterward cleared up and sight is normal.

I dressed the wounds with limewater and linseed oil, equal parts, applying it on old linen cloths saturated with the mixture, and covering it with wadding obtained at a dry-goods store.

In the evening when I changed the dressings I found vesicles and large bullæ had formed containing clear serum, the largest to the amount of four ounces, all of which I punctured, removing all loose strips and hanging folds of epidermis.

The limewater and linseed-oil dressing was used four days and then discontinued, a dressing of plain vaseline being substituted. As soon as pus began to form the wounds were thoroughly cleansed with corrosive-sublimate solution (1 to 3,000), using small pledgets of absorbent cotton, then dusted with acetanilide and boric acid, equal parts, applied with a pepper duster, and the vaseline dressing applied; dressing changed every twenty-four hours.

The corrosive-sublimate solution seeming to cause too much irritation, I changed to two-per-cent. carbolic-acid solution, which worked admirably.

The eyes were treated with ice compresses, the pupils were kept fully dilated with atropine sulphate, and the following eye wash was ordered: ℞ Acidi boric., sodii biborat., āā ℈j; aquæ camph., aquæ, āā ℥ ij. M.

The internal treatment was with morphine to quiet pain, and aconite when the pulse was too full and strong.

May 22d, twenty-five days after the accident, the wounds were all healed except those of the calf and ankle of the left leg; on the calf was an ulcer eight inches long by four inches wide, and on the ankle a strip two inches wide, running nearly around the leg, both having a very unhealthy appearance, with deeply cut edges. I concluded it would be necessary to try skin grafting, but wished first to get a healthy granulating surface. It was then I conceived the idea of treating it with bovine blood.

23d.—I first cleansed the ulcers thoroughly with the carbolic solution, then saturated plain aseptic gauze with bovinine and covered the ulcers; over this I put a layer of gutta-percha tissue, and covered the whole with wadding. The following morning when I removed the dressings there was no pus, and healthy pink granulations were springing up over the ulcers. I changed the dressings every twenty-four hours, and could see a rapid improvement each time, the new skin extending in more and more from the edges. Improvement was so rapid I concluded grafting would not be necessary, and continued the bovinine dressings, dusting the new granulations with calomel if they became at all exuberant.

June 4th, twelve days after beginning these dressings, the ulcers were entirely healed. I then put on a dressing of plain vaseline, applied a bandage, to be worn during the day as a support to the circulation, and discharged the case.

12th.—At this writing there are no signs of any remaining scars.

One thing noticeable with the blood treatment was the absence of pain. Before I used it the ulcers were very painful, but after applying the blood dressing there was immediate relief, and the patient experienced no more pain.

Therapeutical Notes.

The Arrest of Hæmorrhage in Hæmophilia by the Application of Healthy Blood.—Dr. Bienwald (*Semaine médicale*, May 5, 1897; *Lancet*, July 10, 1897) has employed this very original method in the case of a child, aged two years, the subject of hæmophilia. Having failed to arrest the hæmorrhage from a small wound on the face by the application of perchloride of iron, he obtained some blood by aspiration from a healthy subject and deposited it on the wound. In a few minutes it coagulated, and the hæmorrhage at once ceased. His explanation of the action of the remedy is that it supplies the ferment necessary for thrombosis in the small vessels. Whether this is correct or not is impossible to say in the absence of definite knowledge of the pathology of hæmophilia. As affording his explanation some support, says the *Lancet*, we may mention the success obtained by Dr. A. E. Wright in his experiments with a solution of fibrin ferment and chloride of calcium as a styptic.

Anilipyrine.—At a recent meeting of the Paris Société de chirurgie (*Gazette hebdomadaire de médecine et de chirurgie*, July 8, 1897) Gilbert and Yvon stated that they had given this name to a product made by heating one equivalent of acetanilide with two equivalents of antipyrine. It is soluble in less than a quarter of its weight of distilled water. It is feebly toxic; in the guinea-pig, given in doses of rather less than thirty grains for each kilogramme of the animal's weight, it produces tetanic convulsions, hypothermia, and death. It acts as an antipyretic when given in doses one fifth as large as the poisonous dose. This action is more pronounced than that of antipyrine and less than that of acetanilide. It is said to act particularly well as an antipyretic and analgetic in influenza, acute articular rheumatism, migraine, and neuralgia. The medium daily amount to be given is from fifteen to thirty grains; the average single dose is seven or eight grains.

A Mixture of Iodoform and Calomel as an Antiseptic.—Spengel (*Bulletin général de thérapeutique*, May 8, 1897; *Journal de médecine de Paris*, July 4, 1897) recommends a mixture of equal parts of iodoform and calomel as an antiseptic application in the treatment of wounds.

Aristol Ointment.—Paucier (*Gazette médicale de Picardie*, June, 1897; *Lyon médical*, July 11, 1897) says that the clumpy product generally obtained by trituration with vaseline may be avoided and an intimate mixture produced by first triturating the aristol with vaseline oil.

An Application for Urticaria.—Gaucher (cited in the *Gazette hebdomadaire de médecine et de chirurgie* for July 11th) recommends this:

℞ Menthol	1 part;
Chloroform, Ether, Spirit of camphor,	each 3 parts.

M. To be used as a spray or as a lotion. The part should then be dusted with powdered starch or zinc oxide.

Arsenic in the Treatment of Pulmonary Emphysema.—The *Indian Lancet* for June 16th attributes the following formula to the *Covremennaya Klinika*:

℞ Sodium arsenate	1 grain;
Potassium iodide, Powdered rhubarb,	each 32 grains;
Extract of dulcamara	a sufficiency.

M. Divide into thirty-two pills. One to be taken daily for the first few days, then two a day.

Eczema of the Anus with Excoriations, as frequently found in persons with hæmorrhoids, may be treated, according to Brocq (cited in the *Therapeutische Wochenschrift* for July 4th), by bathing the anus with boric-acid water, applying zinc ointment, and then dusting on the following powder copiously and holding it on as well as possible with a pad:

℞ Powdered camphor	2 parts;
Zinc oxide, Bismuth subnitrate,	each 30 "
Talc	40 "

M.

If the parts are somewhat irritated, they may be penciled every two days with a four per-cent. solution of silver nitrate. The anus should be washed with boric-acid solution after every evacuation.

An Anodyne Application.—The *Revue médicale*, of Quebec, gives the following formula:

℞ Atropine sulphate	15 parts;
Morphine hydrochloride	75 "
Pure oleic acid	4,000 "

M. S.: Anoint the painful part with the solution, then cover it with wadding and apply an impermeable fabric over all.

Pyrantin, $(CH_2CO)_2,N.C_6H_4,OC_2H_5$, or p-ethoxyphenylsuccinimide, is described in the *Therapeutische Wochenschrift* for July 4th as a colorless substance crystallizing in prismatic needles, almost insoluble in cold water, rather readily soluble in hot water, and insoluble in ether. Its sodium compound, known in trade as "soluble pyrantin," is quite soluble in water. Both varieties, according to Piutti, are antipyretic. Gioffredi recommends the employment of pyrantin in daily amounts of from fifteen to forty-five grains in acute rheumatism.

A Collutory for Difficult Dentition.—Brugeille (*Revue médicale*, July 7th) recommends the following:

℞ Sodium bromide	15 grains;
Orange-flower water, Syrup of ether,	each 2 fl. ounces;
Distilled water	8 " "

M. The gums are to be rubbed gently with this solution several times a day, after nursing.

Airol Paste in the Treatment of Wounds.—Bruns (*Beiträge zur klinische Chirurgie*, xviii, 2; *Centralblatt für Chirurgie*, July 17, 1897) recommends a paste of the following composition for covering sutured wounds:

℞ Airol, Mucilage of gum arabic, Glycerin,	each 10 parts;
White bole	20 "

M. The paste should be spread on evenly and covered with a thin layer of cotton and a slightly compressive bandage. It dries rapidly, adheres well, works powerfully as an antiseptic, is absolutely unirritating to the skin, and allows the serous secretion of the wound to pass through it. It surely prevents infection of punctured wounds by germs from the skin.

Bromides in the Treatment of Nervous Palpitation of the Heart.—Malbec (cited in the *Indépendance médicale* for July 21st) advises the following:

℞ Strontium bromide, Sodium bromide,	each 5 parts;
Orange-flower water	150 "

M. S.: A tablespoonful, in infusion of valerian, daily.

Nosophene, Antinosin, and Eudoxin as Disinfectants.—De Buck (*Belgique médicale*, 1896, No. 27; *Wiener klinische Wochenschrift*, July 15, 1897) thinks that a one-to-two-hundred solution of antinosin fulfills all the requirements of an antiseptic fluid in surgery; that nosophene has the advantages over iodoform of being odorless, non-poisonous, and unirritating to the skin; and that eudoxin is one of the best of the bismuth salts as a gastro-intestinal disinfectant.

Ichthyol in the Treatment of Chronic Purulent Otitis Media.—In the *Medical Record* for July 31st Dr. Theron W. Kilmer reports the case of a boy, six years old, who had complained of frequent attacks of intense pain and a continuous discharge from his right ear, dating from an attack of scarlet fever seven months previous. After the removal of a moderate amount of thick pus and crusts lining the auditory canal the drum was of a pale color, with a slight perforation in the posterior-inferior quadrant. Hearing was to some extent impaired. After thorough cleansing of the parts with warm water, a pledget of cotton was soaked with a three-per-cent. solution of ichthyol and placed close against the drum. A second piece of cotton was loosely placed over this as a means of protection. After two days the cotton was removed. All pain had ceased, the discharge was less, and the parts appeared better in every way. The ear was again packed as before, and with a third subsequent treatment the discharge was totally stopped, and at the time of the report there had been no pain, and the hearing was a very little improved.

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GANGRENE CONSEQUENT ON CONTUSION OF A LARGE ARTERY.

A contributor to the *Journal des praticiens* for July 17th, apparently M. Lejars, remarks that gangrene consequent upon injury of a large artery, although of frequent occurrence, is by no means always of the same form or of the same pathogeny. He then proceeds to treat of what he terms a very curious type of arterial traumatism, direct subcutaneous bruising of the vessel, without any injury of the bone, due to a blow of variable force and character. The writer reports two cases of this sort. The first was that of a man, twenty-seven years old, who was struck in the right popliteal region with a "tampon de tramway." The foot and leg were pale, insensitive, and cold, and there was no pulsation to be felt in the dorsal artery of the foot, in the posterior tibial, or in the lower part of the popliteal. The effusion of blood was slight and superficial; there was no pulsation or other sign of diffuse aneurysm. At the end of a few days sensibility and warmth reappeared to some extent in the leg and foot, but only to vanish again; and in the course of the first few weeks these transitory returns of vitality occurred several times. Finally the foot and the lower part of the leg showed humid gangrene, and amputation had to be performed.

In the second case the gangrene was of the dry variety, and it was partial and peripheral. The patient was a man, thirty-eight years old, very vigorous and in excellent health. He was knocked down by a loaded rubbish cart, and the wheels passed over his right arm and his legs. The writer saw him two hours after the accident and was able to follow the whole subsequent course of the case closely. When the man was first seen he was in an alarming state of collapse, and there was difficulty in reviving him with subcutaneous injections of a solution of salt. There were no internal injuries, but there were many contused wounds, and the right brachial artery was injured. There was no pulse in either the radial or the ulnar artery, and the hand was cold, blanched, motionless, and senseless. The loss of sensibility extended only to the middle of the forearm, but the skin was cold as far up as the bend of the elbow, where there was a flabby swelling, not very large, along the course of the vessels and extending upward upon the inner border of the biceps. It was only above the elbow that any arterial pulsation could be felt. It was evident that the brachial artery had been injured, but there was no dislocation or fracture, there was no considerable collection of blood, and the tumefaction which surrounded the artery seemed to be due solely to an effusion of blood into the sheath of the vessels. On the morning of the following day the hand had regained a certain degree of warmth, but it still remained insensible. The swelling had not increased in volume, but was a little firmer. Pulsation had not returned in any part where it had been lost.

In this case, too, there occurred a series of alternations in the condition of the injured limb. At the end of a fortnight the hand seemed definitively lost, then warmth and a little sensibility showed themselves anew, and finally there was sphacelus of almost the whole of the middle, ring, and little fingers and of a portion of the index-finger and thumb. The line of demarcation was very irregular, and above it there were a few scattered eschars. It was not until three months had passed that operative interference was practised, and at the time of the report the hand was still reddish and glossy and there was pain in it at times. The radial pulse had again become perceptible, although it was yet feeble.

The writer remarks that, although in these two cases there was no opportunity for a direct examination of the arterial lesion, the absence of such a sanguineous collection as would accompany complete rupture, together with the results of palpation of the bend of the elbow in the second case, is enough to convince him that in these instances, as in a considerable number of others, there was an obliteration of the artery by the rupture and retraction of its inner and middle coats. It is in the mechanism of this obliteration, he believes, that we must seek for the causes of such a total or partial gangrene as simple localized occlusion of the arterial trunk would not suffice to explain. It may happen in such a case, he goes on to say, that the large accompanying vein is ruptured and obliterated at the same time, and this double lesion appears to occur especially in cases in which, as in the first one related, humid gangrene *en masse* follows. Moreover, the torn inner coats of the artery retract for a considerable distance, and the clot occupies a great extent of the vessel, closing important collateral channels. Finally, in his opinion, the bruising of the accompanying nerve often exercises a manifest influence, as he thinks was shown by the altered nutrition of his second patient's hand. As a practical point, he thinks it well to emphasize the long period of doubtful vitality through which the injured limb passes, together with the occasional very slow course of the sphacelus, which takes a long time to fix and limit itself. That final limitation will govern the prognosis and the treatment.

THE PATHOLOGY OF DYSMENORRHŒA.

Some months ago, before the Netherlandish Gynæcological Society, Dr. Mendes de Leon, as we learn from the *Centralblatt für Gynäkologie* for July 17th, combated the obstruction theory of dysmenorrhœa. He would divide dysmenorrhœa into two classes, namely, dysmenorrhœal endometritis and uterine spasm (essential dysmenorrhœa). The first class would include all forms in which there was any local mechanical obstacle recognizable, such as a sharp turn in the uterine canal with secondary proliferation of the mucous membrane, stenosis, and the typical dysmenorrhœal endometritis. All other cases would fall under the head of uterine spasm. On the strength of Keiser's investigations, he was inclined to regard this spasm as affecting the sphincter of the uterus, that is, the cervix.

Out of a hundred and sixty-seven patients observed by the author during a certain length of time in the gynæcological department of a public clinic, thirty-seven had complained of painful menstruation. In thirty-two of them a local cause was discovered, but in the five others, certainly virgins, the affection should be classed as spasmodic. Besides these thirty-seven subjects of dysmenorrhœa, there were among the patients twenty-one who had manifest stenosis without painful menstruation. Among the patients subjected to curetting there were seventeen who complained chiefly of dysmenorrhœa, but only one of them had stenosis to a high degree. Of these seventeen, eight were completely cured by curetting; of the nine others, seven returned in the course of a year with a relapse of their old trouble, and two received absolutely no relief. At their earnest request, one of these women was subjected to oophorectomy, and the other to removal of the uterus.

Dr. Treub remarked that stenosis might be due to swelling of the mucous membrane occurring only at the time of menstruation, and be undiagnosticable at other times. If Keiser's investigations warranted the theory of spastic contraction, he thought high amputation of the cervix should be performed. Dr. Stratz called attention to the fact that diseases of the ovaries and of the Falloppian tubes might occasion dysmenorrhœa. He mentioned a case of dysmenorrhœa and sterility in which, after the failure of all the measures practised in Holland, Schröder's conical excision of the cervix had done away with both complaints. Dr. Van Tussenbroek stated that in the case of oophorectomy reported by the author of the paper the microscope had revealed "subacute oophoritis."

Dr. Van de Poll believed in heredity as a cause of nervous dysmenorrhœa. In a family known to him two daughters suffered with dysmenorrhœa, a son had dyspepsia, and the father was a drinker; in another family three girls had dysmenorrhœa, a boy had nervous dyspepsia and headache, and the father was not a drinker. In this discussion, as usual when such a subject is talked about, nobody seems to have convinced anybody else; the author of the paper declared in his closing remarks that he still stuck to his classification, but he promised to try high amputation of the cervix in subsequent cases of hysterospasm. Our own opinion is that there is much to sustain Dr. Mendes de Leon's main contention.

MINOR PARAGRAPHS.

THE ACTION OF THE RÖNTGEN RAYS ON THE RETINA.

At a recent meeting of the Paris Académie des sciences (*Gazette hebdomadaire de médecine et de chirurgie*, July 15th) M. Bardet said that, contrary to the opinion that the x rays had no action on the retina, he could affirm that every person whom he had observed felt a luminous sensation when the eye was in the field of action of a tube illumined by the cathodic light, and that the optic media, if they did offer resistance, did not prevent the luminous action. But, for the phenomenon to be manifested, it was necessary that the subject should be under conditions favorable for the experiment, for the action was very feeble and could be produced only in absolute darkness. It was feeble, but it was clear, and it was synchronous with the vibrations of the tube. If the axis of the tube was so turned as to direct the radiations into another quarter, the phenomenon ceased, and this seemed to do away with the supposition that the impression was due to the action of the electrical field. All media through which the Röntgen rays could pass allowed of the production of the luminous phenomenon, while it was prevented by media that were impassable to the rays. He had no doubt, therefore, that the radiations of Crookes's tube exerted a direct luminous action on the retina. However, there was one objection that he had not yet been able to resolve—the supposition of a fluorescent illumination of the optic media. M. d'Arsonval remarked that he had already mentioned the fact that luminous sensations might be occasioned by waves of an entirely different nature—for example, by means of an alternating magnetic field. If, said M. d'Arsonval, a person placed his temple near an electro-magnet animated by an alternating current (in his case one of forty-two periods), he would very clearly perceive flashes of light of which the period was from three to four to the second. Sometimes a very clear image of the fundus oculi was perceived. Finally, living tissues placed in such a field were the seat of interesting phenomena which he would describe at some subsequent time. The fact that only a very slight effect had been obtained with the constant magnetic field was due, said M. d'Arsonval, to the circumstance that the magnetic field, like all other physiological excitants, acted by its variations rather than by its absolute intensity.

THE SERUM TREATMENT OF TUBERCULOSIS.

Dr. Paul Paquin, of St. Louis, has had the kindness to send us a copy of his Further Report of Cases Treated with Antitubercle Serum, in the form of a pamphlet reprint from the *Journal of the American Medical Association.* The general tenor of Dr. Paquin's writing on this subject is commendably conservative; he is in no haste to allege "cures" in the cases of persons who have been enabled to return to their customary work in consequence of the improvement of their health brought about by the serum treatment; indeed, he says specifically that too much must not be expected of this or of any other treatment of tuberculous pulmonary disease. It can never be possible, he says, to arrest consumption when the tissues are so destroyed and their recuperative energies so enfeebled that they are beyond the power of stimulation. But in the early stages—the only time when the best results may be expected—the antitubercle serum is a most efficacious remedy. Dr. Paquin points out anew that a composite infection is one great difficulty to be contended with, and this, he says, can be reached only by the use of antitoxines prepared especially for counteracting the germs that produce the complications, assisted occasionally by other measures; the tubercle antitoxine can not act directly on these complications. Dr. Paquin adds the wise remark that it should not be forgotten that the destructive process of tuberculosis is so great and so comprehensive that no means of judicious special or general treatment as an adjuvant to the serum treatment should be neglected.

THE NORMAL SITE OF THE PLACENTA.

Caruso, of Naples, in a contribution to the third volume of transactions of the Società italiana di ostetricia e ginecologia, gives the results of his extensive investigation of the question of the relative frequency with which the placenta is implanted on different parts of the uterine wall. According to an abstract published in the *Centralblatt für Gynäkologie* for July 17th, he finds that the commonest site is on the anterior wall, and the next commonest on the posterior wall. The implantation at the fundus is rarer, that on the right lateral wall rarer still, and that on the left lateral wall the rarest of all. He draws the following practical conclusions: 1. Efforts at external version should not be too long continued or too energetic, for the placenta is generally situated on the anterior wall of the uterus. 2. On introducing a catheter into the uterus to bring on premature labor, the instrument should be guided along the left side of the organ. 3. In the Cæsarean operation, the placenta is most likely to be avoided by making the uterine incision at the fundus.

THE CURATIVE ACTION OF FEVER.

Löwy and Richter (*Berliner klinische Wochenschrift,* 1897, No. 9; *Centralblatt für innere Medicin,* July 17, 1897) have found that all infected animals that have had their temperature raised by "heat-puncture" live longer than the check animals. They conclude from this that fever is a conservative process. Most chemical antipyretics, they remark, act at the same time as nervines and tonics, and a few even as specifics, but antipyretic hydrotherapeutics may, by the leucocytosis to which the stimulus of cold gives rise, play an important part in combating the infection.

SAL AMMONIAC.

In an article entitled A Simple Fire Extinguisher, the *Scientific American* for July 24th says: "Take twenty pounds of common salt and ten pounds of sal ammoniac (nitrate of ammonia, to be had of any druggist)," etc. This seems to be erroneous, for the common impression is that sal ammoniac is ammonium chloride.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 3, 1897:

DISEASES.	Week ending July 27.		Week ending Aug. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	16	5	27	12
Scarlet fever	65	6	78	6
Cerebro-spinal meningitis	2	0	1	0
Measles	149	3	96	8
Diphtheria	175	27	136	21
Croup	3	4	2	1
Tuberculosis	129	89	236	94

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon-general during the week ending July 31, 1897:

Small-pox—United States.			
Brooklyn, N. Y.	July 17-24		1 death.
New York, N. Y.	July 17-24		1 "
Small pox—Foreign.			
Rio de Janeiro, Brazil	June 12-19	2 cases.	
Singapore, India	May 1-31.		4 deaths.
Madrid, Spain	July 1-7		5 "
Odessa, Russia	July 3-10	3 "	2 "
St. Petersburg, Russia	July 3-10	4 "	2 "
Calcutta, India	June 5-19		9 "
Bombay, India	June 22-29		1 death.
Montreal, Canada	July 2-26	5 "	3 deaths.
Warsaw, Russia	July 3-10		4 "
Cholera.			
Calcutta, India	June 5-19		90 deaths.
Bombay, India	June 22-29		14 "
Tokio Fu, Japan	June 28-July 6	3 cases.	
Fukuoka Ken, Japan	June 28-July 6	1 case.	
Hiogo Ken, Japan	June 28-July 6	1 "	1 death.
Oyama Ken, Japan	June 28-July 6	1 "	
Osaka Fu, Japan	May 1-July 6	13 cases,	2 deaths.
Yellow Fever.			
Rio de Janeiro, Brazil	June 12-19	6 cases,	1 death.
Cienfuegos, Cuba	July 11-18		5 deaths.
Matanzas, Cuba	July 7-21		7 "
Plague.			
Bombay, India	June 22-29		11 deaths.
Taiwan (Formosa), Japan	June 28-July 6	13 cases.	

The American Association of Obstetricians and Gynæcologists.—The following announcement has been received from the secretary, Dr. William Warren Potter: The tenth annual meeting will be held at the Cataract House, Niagara Falls, N. Y., on August 17th, 18th, 19th, and 20th. The management of the Cataract House offers a special rate, American plan, to all who visit Niagara under the auspices of the association during that week. The railways will sell return tickets to all who visit Niagara under the auspices of the association for a third of the regular fare, provided the visitor obtains a certificate from the ticket agent at the starting point setting forth the transaction, which certificate must be signed at Niagara by the secretary of the association and there viséd by an agent of the traffic association. This agent will be in attendance on Wednesday and Thursday only.

The Alumni Association of the German Hospital has been organized with the following officers: President, Dr. William K. Kubin; vice-president, Dr. Franz Torek; treasurer, Dr. Alexis V. Moschcowitz; recording secretary, Dr. Selian Neuhof; corresponding secretary, Dr. Gustav G. Fischlowitz. The association will meet twice a year.

Changes of Address.—Dr. William G. Schauffler, from Lakewood, N. J., to Jefferson, N. H. (for July, August, and September); Dr. Frank C. Skinner, from Philadelphia to No. 104 Arlington Avenue, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 25 to July 31, 1897:*

BACHE, DALLAS, Colonel and Assistant Surgeon General, is granted leave of absence for one month, with permission to apply for an extension of one month.

PHILLIPS, JOHN L., Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect upon the arrival of KEEFER, FRANK R., Captain and Assistant Surgeon, at Fort Walla Walla, Washington.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending July 31, 1897:*

AMES, H. E., Surgeon. Detached from the U. S. Steamer Cincinnati, ordered home, and granted leave of absence for two months.

ANDERSON, F., Surgeon. Detached from the U. S. Steamer Dolphin and ordered to the hospital at Yokohama, Japan, by steamer of August 14th.

BAILEY, T. B., Passed Assistant Surgeon. Detached from the U. S. Steamer Machias and ordered to the U. S. Steamer Yorktown.

BEYER, H. G., Surgeon. Detached from the Museum of Hygiene and ordered to the U. S. Steamer Amphitrite.

GATEWOOD, J. D., Surgeon. Ordered to Brussels, Belgium, and Berlin, Germany, as delegate, then return.

GARDNER, J. E., Surgeon. Detached from the U. S. Steamer Amphitrite and ordered to the U. S. Steamer Dolphin.

PAGE, J. S., Passed Assistant Surgeon. Detached from the U. S. Steamer Yorktown and ordered to the U. S. Steamer Olympia.

PIGOTT, M. R., Passed Assistant Surgeon. Detached from the U. S. Steamer Olympia and ordered to the U. S. Steamer Machias.

ROTHGANGER, G., Passed Assistant Surgeon. Detached from the U. S. Steamer Pinta and ordered to the U. S. Steamer Wheeling.

THOMPSON, J. C., Assistant Surgeon. Ordered to the Naval Laboratory, New York.

WHITE, S. S., Passed Assistant Surgeon. Ordered to report on board the U. S. Steamer Concord immediately.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Two Weeks ending July 24, 1897.*

NORMAN, SEATON, Assistant Surgeon. To proceed to Memphis, Tenn., and assume temporary command of service for thirty days, and then to rejoin station. July 20, 1897.

Answers to Correspondents:

No. 461.—Under the circumstances stated, the best course for Dr. B. to pursue, we think, would be to suggest that he be called in consultation after Dr. A.'s consent has been obtained. If that fails, Dr. B. is justified, in our opinion, in telling the family that he can not see the patient professionally unless Dr. A. is discharged, but much depends on the manner in which he does it. He should not give the impression that he himself wished for Dr. A.'s discharge.

Births, Marriages, and Deaths.

Died.

CURRAN.—In New York, on Saturday, July 24th, Dr. John Joseph Curran, aged thirty-seven years.

LOVE.—In Montclair, New Jersey, on Friday, July 30th, Dr. John J. H. Love.

O'DONNELL.—In Kerrville, Illinois, on Saturday, July 24th, Dr. William A. O'Donnell, of Milwaukee, in the twenty-fifth year of his age.

PADDOCK.—In Natchez, Mississippi, on Wednesday, July 28th, Dr. Frederick B. Paddock, in the sixty-first year of his age.

Letters to the Editor.

TEETHING AND DIARRHŒA.

GRAFTON, WEST VIRGINIA, *July 22, 1897.*

To the Editor of the New York Medical Journal:

SIR: In one of the latest and surely one of the best works upon pædiatrics, Dr. S. Emmett Holt's *Diseases of Infancy and Childhood,* page 310, I read: "There are cases in which diarrhœa and dentition are closely associated, for the bowels quickly become normal when the teeth have pierced the gums. These, although rare, do occur." On page 64, vol. iii, of Keating's *Cyclopædia of Diseases of Children,* he gives utterance to the same idea, only he is a little more elaborate. I call attention to this because I believe Dr. Holt is mistaken in both his pathology and his ætiology, and I wish to bring this point to the consideration of the profession in America. If teething is ever the cause of a diarrhœa, such has never come within my observation, although I never have treated a serious case that I was not told that "teething" was the cause. I believe I should not overstate the subject if I should say that nine tenths of the physicians and the entire laity believe that "teething" is the sole cause of all diarrhœa in children.

All the connection there is between "teething" and diarrhœa I believe is included in this one fact: During the period of teething the alimentary canal of the child is undergoing a change from a state where it is intended only to digest milk to a state where it will digest solid food; and during this state the whole alimentary canal is more irritable. Hence, even things that the child may have taken before with impunity are likely to irritate the canal and so cause a diarrhœa. I have traced these diarrhœas to various indigestible and irritating substances swallowed by the child, such as buttons, beads, tin foil, orange peel, and all kinds of cake, bread, and fruit.

Also the too frequent feeding or nursing of children often keeps the stomach almost perpetually at work, and the "teething" period is begun under the disadvantages of a bad state of dyspepsia. Hence these children universally suffer from diarrhœa, more or less, during the summer. I do not believe that "teething" is ever the cause of a diarrhœa. If I am wrong, I should be pleased to see my error. A. J. Baker, M. D.

IODINE IN THE TREATMENT OF URTICARIA.

Lewisburg, Pa., *July 12, 1897.*

To the Editor of the New York Medical Journal:

Sir: After reading Dr. G. T. Jackson's article on Chronic Urticaria, in the *Journal* of July 10th, I have decided to report the following case occurring in my practice a short while ago. I report this case of acute urticaria not because of any peculiarity in the symptoms of the attack, but rather because of the speedy relief derived from a method of treatment that I do not find used by any authorities whose works I have read on this vexatious malady:

Mrs. C. S., aged sixty years, the mother of four children, had fair health previous to this attack, although she was of a rather nervous temperament. Her aged mother died after a lingering illness, and on the day following her death this attack came on, and I attributed it to nervous excitement from grief. The patient's face and neck were covered with small wheals. There was much swelling about the eyes and nose and the parts were very red and inflamed from scratching. The pain was very severe, and for two days and nights she slept scarcely any, although opiates were used. I tried everything that I could think of as being used for urticaria, without success. Finally I tried tincture of iodine painted over the entire surface. This caused intense smarting, and to check it I applied fresh lard with a feather. Before I had finished with this the patient was asleep, and, to my surprise and delight, slept for several hours. Upon her awaking, her face was a little sore, but the smarting had disappeared to return no more. In a day or two the skin peeled off as it does after using iodine, and she has not had any symptoms of the urticaria returning so far, and four weeks have now elapsed.

I hope some of the *Journal's* readers will try this treatment and report results. H. O. Carmichael, M. D.

ATHREPSIA OR TUBERCULOUS MENINGITIS?

Grand Valley, Ontario, Canada, *July 24, 1897.*

To the Editor of the New York Medical Journal:

Sir: Having read the article by Dr. William J. Robinson which appeared under this title in the *Journal* for July 17th, I subjoin my view of the case in question.

To my mind, the difficulty lay in a want of digestive power. The rhubarb and soda were, to say the best of them, irrelevant. The coma and collapse were due to thrombosis of the cerebral sinuses, an accident apt to occur in such marasmic cases. Stimulants would have an effect on the collapse, but none on the coma. The sodium bromide would further diminish the circulation in the already ill-nourished brain, and favor a return of the collapse. Later, a foul evacuation was procured by an enema, and three nutrient enemata of egg, etc., with stimulants, were thrown into the intestine. The intestine having no digestive or preservative power and being of necessity only imperfectly cleansed, rapid putrefaction of the enemata would ensue, with the production of pyrexial and convulsive ptomaines, and to this, with probably some inflammatory reaction in the neighborhood of the occluded sinuses, I should attribute the final pyrexia and convulsions. The child could not do otherwise than die. Had it received early treatment with hydrastis, strychnine, bismuth, pepsin, and hydrochloric acid, with suitable diet, it might have lived.

A. C. Gaviller, M. D.

A CAUTION AS TO THE DANGER OF CHLORAL.

Millington, Ill., *July 26, 1897.*

To the Editor of the New York Medical Journal:

Sir: It might not be amiss to occasionally remind the profession of the treachery of that otherwise excellent drug, chloral hydrate.

A few days ago I was called to a lady, sixty-five years of age, suffering greatly from asthma, complicated by chronic bronchitis and emphysema. I had been the family physician for some years, but a few months ago, for reasons not of a professional nature, they had changed physicians. The new doctor had been battling with the disease unsuccessfully for six weeks, and when I was recalled to my old friend I naturally wished to help her as speedily as possible. I knew by experience that chloral acted promptly in her case, so I immediately gave her a fiftieth of a grain of atropine hypodermically and ten grains of chloral per os. At this time the dyspnœa was so urgent that the patient could speak only in monosyllables. In a very few minutes the breathing became much easier, but in fifteen minutes the pulse had increased from 92 to 120 and the patient was becoming sleepy. In half an hour the pulse was 136, very weak and irregular, and the woman in a stupor; in fact, all the symptoms of acute poisoning by chloral were present, except that the respirations remained normal, which was no doubt owing to the simultaneous effect of the atropine. By the vigorous use of strychnine and digitalin the woman was rescued from her perilous condition, but I firmly believe that had it not been for the atropine given synchronously with the chloral I should have lost my patient. I might say that I had frequently given this woman fifteen grains of chloral every three hours without ill effect.

After the lapse of five hours the use of chloral was continued in doses of five grains, with one drop of fluid extract of digitalis, every two hours, with instructions to omit it if the patient should be asleep or sleepy. The difficult breathing did not return, and the patient got the first good night's rest in many weeks. The next day, although still taking the chloral and digitalis, the patient was bright and feeling well, with a strong pulse of eighty-eight. R. Boyd Miller, M. D.

IS INFANTILE PARALYSIS EPIDEMIC?

117 West Fifty-fifth Street, New York, *July 27, 1897.*

To the Editor of the New York Medical Journal:

Sir: As it is rare for the orthopædic surgeon to see cases of infantile spinal palsy until months after the attack, the number of fresh cases seen this month has attracted my attention, and leads me to ask if this corresponds with the experience of others.

During July there have been brought to the outdoor department of the Hospital for the Ruptured and Crippled eleven persons with poliomyelitis anterior acuta, within a week or two of the onset, and I have seen one private case in consultation. The ages ranged from seven months to four years; eight were boys and four girls. One case followed a chilling from sitting on the grass; one case came two days after a fall; in several cases the child had just begun to walk. In all the cases fever and restlessness were followed in a day or two by more or less complete helplessness of one or more limbs. In only one case were convulsions mentioned. In a number of cases the attack was followed by considerable sensitiveness to handling and movement, and in one case this was so marked and persistent as to lead to the diagnosis of acute rheumatism. This symptom should be borne in mind, as very little is said about it in the books. The exceptional distribution of brachial monoplegia was present three times, and in all three it was on the left side.

As infantile paralysis sometimes occurs in epidemics, of which I have myself known several instances, and as it may be an infectious disease, I have gone over these cases to see if any distinct grouping was manifest, and with the following result:

Two cases occurred in Brooklyn, one in upper Second Avenue, one west of Central Park, two near East Forty-second Street, and six within a radius of slightly over half a mile from a point north of Grand Street and east of the Bowery. In tracing the dates of onset in the latter cases I found that they developed in regular order from north to south and from east to west. This is the succession: June 27th, Ninth Street, near Avenue C; June 29th, Lewis Street; June 30th, Pitt Street; July 1st, Eldridge Street; July 1st, Oliver Street; July 12th, Bowery, near Stanton Street.

One would expect to find the most cases on the congested East Side, and the order of development is probably a coincidence. The object of this communication is to ascertain whether this affection is unusually prevalent in New York this summer, and to call the attention of the profession to the importance of always keeping this disease in mind when called to children of four or under, taken suddenly sick in summer. The early diagnosis is so seldom made that the treatment of the attack is imperfectly understood. Strict repose, with the aid of bromides and the warm pack, if necessary, and the repeated application of sinapisms to the affected region of the back would seem to be indicated. There is danger of doing harm by too much interference and too much drugging. After all the acute symptoms have subsided, galvanism, massage, and orthopædic management are urgently indicated. HENRY LING TAYLOR, M. D.

Book Notices.

A System of Medicine. By Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume II. London and New York: The Macmillan Company, 1897. Pp. xiv–3 to 1176. [Price, $5.]

EVER since the appearance of the first volume of this work we have awaited with some eagerness the publication of its successors, for, as we have already said, it possesses qualities of rare merit. So unusual, indeed, in some respects is the first volume that in awaiting the others our expectation has not been unmixed with apprehension lest by contrast the others might be disappointing. So far as the volume now noticed is concerned, we might have saved ourselves these fears, for certainly they have not been justified.

The volume begins with a presentation of infective diseases of chronic course, and under this heading are included tuberculosis, leprosy, actinomycosis, and Madura foot. Following this are the diseases of uncertain bacteriology, and this class is necessarily inclusive of a considerable number of chapters descriptive of such diseases as measles, chicken-pox, small-pox, and a variety of other familiar disorders, together with chapters upon more uncommon diseases, especially the infective diseases of tropical climates. Respecting these last named, the volume is unusually wealthy and, though it is true that few of us are called upon to make the personal acquaintance of these disorders, yet clearly it is to our advantage not to be ignorant of them. The editor is to be congratulated on having for contributors upon these topics men who know whereof they write, for the rarer the disease so much the greater necessity for its description being an authoritative one and not merely a medical heirloom rewritten.

The group which follows is entitled infective diseases communicable from animals to man, and under this head are described glanders, anthrax, vaccinia, foot-and-mouth disease, rabies, and glandular fever. Now, of these descriptions none can be read save to the reader's advantage, but the chapters upon vaccinia can not be dismissed with this generalization alone. Seldom to our knowledge has the subject of cow-pox and vaccination been so thoroughly and so satisfactorily presented. The detail is minute and admirable, and the fund of information so ample that the subject would seem literally to be exhausted so far as exhaustion is now possible in things medical. That the appearance of this volume has been delayed in order that the Report of the Commission on Vaccination might become available for the completion of these chapters ceases to be a matter of regret, for the result gained compensates more than amply for the waiting.

In the next division are discussed diseases due to protozoa—that is, malarial disease, hæmoglobinuric fever, and amœbic dysentery.

Intoxication is the title of the division which follows, in which are presented ptomaine poisoning, grain poisoning, mushroom poisoning, alcoholism, opium poisoning and other intoxications, metallic poisoning, and snake bite. Especially to be remarked in this connection is the contribution of Dr. Calmette upon the treatment of snake bite with antivenomous serum.

The volume's final division is upon internal parasites, but, as addenda, are presented the serum diagnosis of typhoid fever and supplements to the articles upon plague and yellow fever.

In concluding what we feel to be a very inadequate notice of this volume we can not but express the heartiest admiration. The work is in many ways a departure from old and far too long trodden paths, and represents all that is newest and best in practical medicine.

A System of Practical Therapeutics. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Volume IV. With Illustrations. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. 6 to 1062. [Price, $6.]

THIS supplemental volume to the editor's well-known *System of Therapeutics* has been prepared for the purpose of presenting the advances made in therapeusis during the past five years by specialists in the various departments of medicine.

Dr. S. Baruch, in his *résumé* of the recent advances in hydrotherapeutics, emphasizes the necessity of following the exact detail of Brand's method in the treatment of typhoid fever. The author does not advocate the use of water as a universal remedy, but as an important auxiliary to enhance vital resistance in the treatment of many diseases.

Dr. S. Edwin Solly, in his paper on the present treatment of tuberculosis, expresses the opinion that the use of tuberculin in practice is as yet of doubtful value, and the same thing, he thinks, may be said of the serum treatment. He does not commit himself to the value of the nuclein treatment, and is content to quote Dr. Vaughan's summary. He does not believe in the antiseptic treatment, not excepting the use of creosote. He states that "purely tuberculous cases do best in cool, dry climates, and next best in warm, dry ones, while inflammatory cases of an erethic type may do best in a warm, moist climate, and next best in a warm, dry one, and catarrhal cases of febrile or irritable character do best in a warm, dry atmosphere, but in catarrhal cases which are not inclined to fever or nervous irritability the reverse holds true."

It is rather difficult to appreciate the logic of Dr. E. Martin's recommendation that "antisyphilitic treatment should be instituted as soon as a chancre is observed," when he states that it is "universally conceded that the most typical local sore may not be syphilitic in nature, or at least may never be followed by other manifestations of the disease." However, this vexed question as to the time to begin constitutional treatment after suspicious venereal infection need not be discussed here. The author's recommendation that the blood be examined both before and during treatment is excellent, and his description of the proper method of epidermal administration of mercury can not be improved upon. Dr. Martin still believes in the advantage of excision of the chancre.

In the section on typhoid fever and malarial diseases Dr. J. M. Anders advocates a combination of hydrotherapeutics and symptomatic treatment, sometimes using a modification of Brand's method. He has found nothing better than quinine for the treatment of paludism.

The editor has described what there is new in the treatment of influenza, scarlet fever and measles, diabetes mellitus, and the affections due to intestinal parasites. Dr. E. Fletcher Ingals is the author of a summary of the treatment of diseases of the nasal chambers and associated affections, and Dr. D. Braden Kyle reviews that of the diseases of the uvula, the pharynx, and the larynx.

Dr. W. H. Park is the author of a carefully prepared paper on the treatment of diphtheria in which he describes the results obtained with the antitoxine treatment.

Dr. Norman Bridge writes on the treatment of asthma, bronchitis, and whooping-cough, and Dr. A. J. McCosh describes the surgical treatment of pleural effusion, empyema, and abscess and gangrene of the lung. Dr. J. B. Herrick is the author of a very comprehensive review of the treatment of croupous and catarrhal pneumonia and pleurisy.

The treatment of diseases of the heart is described by Dr. F. P. Henry; that of diseases of the blood, by Dr. Ralph Stockman; that of diseases of the liver, by Dr. J. Eichberg; that of diseases of the thyreoid and thymus glands, myxœdema, cretinism, Graves's disease, and obesity, by Dr. S. J. Meltzer; and that of diseases of the stomach, by Dr. T. G. Ashton.

Dr. G. R. Fowler is the author of the section on peritonitis, appendicitis, paratyphlitic abscess, and obstruction of the bowels, and Dr. J. M. Mathews, of the paper on diseases of the rectum and anus, which are discussed from the standpoint of the surgeon as well as that of the physician, while Dr. W. W. Johnston describes diarrhœal diseases and dysentery.

In the paper on the modern treatment of diseases of the skin, Dr. H. W. Stelwagon makes no effort to mention the many drugs that have been exploited as remedial agents for such affections, but describes those that he has found to be of therapeutic value.

Dr. J. Collins describes the treatment of spasmodic affections of the nervous system, Dr. F. X. Dercum reviews the treatment of the drug habits, and Dr. H. T. Patrick is the author of the paper on the disorders of sleep.

The section on the treatment of renal diseases is by Dr. N. S. Davis, Jr.; that on the genito-urinary diseases of women is by Dr. E. E. Montgomery, and that on genito-urinary diseases of men is by Dr. W. T. Belfield.

Dr. C. A. Wood has written the paper on those diseases of the eye that are likely to be treated by the general practitioner, and Dr. S. McC. Smith, that on diseases of the ear.

The essential feature of the volume is the practical character of the several papers, and it forms a desirable supplement to the deservedly popular volumes which have preceded it.

Diseases of the Eye and Ophthalmoscopy. A Handbook for Physicians and Students. By Dr. A. Eugen Fick, University of Zurich. Authorized Translation by Albert B. Hale, A. B., M. D., Consulting Ophthalmic Surgeon to Charity Hospital, Chicago, etc. With a Glossary and One Hundred and Fifty-eight Illustrations, many of which are printed in Colors. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xvi–17 to 488. [Price, $4.50.]

Still another volume is here added to the long list of works upon the eye. The author considers that our best text-books are too exhaustive, and that there is still a place for a compactly written book on ophthalmology.

The volume before us is a fairly careful presentation of orthodox modern ophthalmology, but from the German standpoint solely. Among other defects, the author makes little or no mention of the new ideas in regard to the diseases and defects of the ocular muscles which have been developed on this side of the Atlantic, and the translator has endeavored to make good this omission.

The work consists of two parts—viz.: The Method of Examination and the Diseases of the Eye. Part first, consisting of 140 pages, is divided into two sections. The first section treats of the functional tests for vision, refraction and accommodation, the light-sense, the color-sense, the field of vision, binocular vision, and squint. The second section discusses the objective methods of investigation, including skiascopy and ophthalmoscopy. The method of examination by the shadow test, or, as the author calls it, keratoscopy, is only briefly considered, and no mention is made of the work of Jackson and others, who have done so much in this country to make the method more widely known.

Part second, consisting of 325 pages, considers the diseases of the eye, and here the author is more practical and his work correspondingly better. In many points, however, the book is too elementary, and from the American standpoint defective. There are very few original illustrations, and most of them are antiquated. The translator has done his work very well and has made a very smooth and readable translation. The book is well printed on heavy paper with less glaze than we usually see, for which the publishers are to be commended. But the work can not be recommended in preference to original English or American text-books.

Water and Public Health. The Relative Purity of Waters from Different Sources. By JAMES H. FUERTES, Member of the American Society of Civil Engineers. First Edition. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Ltd., 1897. Pp. x–75. [Price, $1.50.]

THOSE who have undertaken the compilation and consideration of statistical material such as is included in this volume can appreciate the great amount of labor involved in collating the facts and the excellent methods that have been employed for their presentation to the reader. The book is one that has been needed, because, while many persons have had some vague ideas of the relationship between water-supply and typhoid fever, yet nowhere has such a mass of material been aggregated for the purpose of demonstrating beyond peradventure the importance of pure water.

The author investigated the relation between the precipitation of rainfall and the prevalence of typhoid fever, because if the typhoid fever death-rate is dependent alone upon the fluctuations of the ground-water level, as has been held by certain good authorities, the prevalence of typhoid fever would not be affected by the quality of the water supplied for drinking purposes. As it was impossible to get records of the ground-water levels in different cities, and as such levels are necessarily affected by the rainfall, this last was selected for comparison. In European cities when the ground-water level was low the typhoid fever death-rate was high, and *vice versa;* in American cities the author finds, as a rule, that in years of high rainfall the typhoid mortality has been high.

The investigations show that more than seventy-five per cent. of the total population of the European cities included in the author's study are supplied with water of a better quality than that obtained by impounding reservoir supplies, of which New York is typical, while in the United States more than seventy-five per cent. of the cities are supplied with water of a poorer quality than that from impounding reservoirs.

One instance is shown in the graphic tables of the importance of an uncontaminated supply; from 1890 to 1892, inclusive, the death-rate from typhoid fever in St. Louis was 33.6 to the hundred thousand; in 1893, in consequence of a sewer emptying above the intake, the rate increased to 104 to the hundred thousand. Attention to the causes that originated the disease reduced the death-rate in 1894 to the old figures, and a change in the source of supply cut that mortality rate down in 1895 to 19 to the hundred thousand.

In an appendix the author describes the sources of water-supply of various cities.

The book has great value and deserves wide reading.

A Contribution to the History of the Respiration of Man. Being the Croonian Lectures delivered before the Royal College of Physicians in 1895. With Supplementary Considerations of the Methods of Inquiry and Analytical Results. By WILLIAM MARCET, M. D., F. R. C. P., F. R. S. London: J. & A. Churchill, 1897. Pp. 116. [Price, $4.20.]

THIS book contains the Croonian lectures (four in number) delivered before the Royal College of Physicians in 1895, and an appendix describing the methods of research. The subject treated is largely the gaseous exchanges of respiration and their modification by various physical and other conditions. The work is based almost entirely upon the author's own researches, which have been carried on for a number of years in London and in various parts of the Alps.

The first lecture deals with the general physiological functions of oxygen and with the effects of cold and of great altitudes upon the production of carbon dioxide.

In the second lecture the author describes various experiments upon the gaseous exchanges in forced and various other modified forms of respiration and in muscular exercise. The most interesting and novel results of his experiments are described in the third lecture, which deals entirely with the effect of oxygen upon "volition" as connected with the performance of muscular work. The author considers that his experiments show that when "volition" is applied to any form of muscular work, although no muscular movements are made and the volume of air respired is not augmented, the amount of oxygen absorbed is increased; he maintains that this oxygen is stored up in the motor cortex and is necessary for the carrying out of the movements willed.

In the fourth lecture some of the phenomena of respiration at great altitudes and their bearing upon certain diseases are considered. The aeration of the blood takes place more readily at great altitudes—a fact which is held to account for the beneficial results in phthisis observed under these conditions. In conclusion, the author speaks of the effect of training in enabling people to ascend to great heights, and makes some remarks on the treatment of asthma. He compares asthma to some forms of mountain sickness, and suggests that, as the latter can be overcome by training the respiration, so probably can the former; he regards cycling as the best form of exercise for this purpose.

The Vertebrate Skeleton. By SIDNEY H. REYNOLDS, M. A., Trinity College, Cambridge, Lecturer and Demonstrator in Geology and Zoology at University College, Bristol. Cambridge: The University Press, 1897. Pp. xvi–559. [Price, $3.]

THE general arrangement of this book is exceptionally good. Following an introductory account of the skeleton in general and its development, is a classification of vertebrates, living and extinct, beginning with the *Chordata,* the ancestors of the true vertebrates. The order of this classification is followed throughout the rest of the book in the descriptions of the various groups.

In addition to the endoskeletal, the exoskeletal, or tegumentary skeletal, structures are described; a feature which is of much interest and value, inasmuch as it is not generally found in such works.

In the descriptions of the different groups a systematic plan is followed, namely: First, the general skeletal characters are described; secondly, the skeleton of one or more type individuals is described in detail; and thirdly, the development of the different divisions of the skeleton is followed out in the group, *i. e.*, the skull, vertebral column, shoulder girdle, etc.

The type skeletons selected are, in fishes, those of the dogfish and cod; in amphibia, those of the newt and frog; in reptiles, those of the green turtle and crocodile; in birds, that of the wild duck; in mammals, that of the dog.

In the development of the divisions of the skeleton, the comparison of extinct forms with the living is most valuable.

The work is illustrated by 110 cuts which, although simple, are clear and well drawn.

For a book necessarily limited in extent and covering so large a field, it is exceedingly complete. Full references are appended in foot-notes, and a list of authors referred to is added.

The book will be found of interest to the general reader as well as of value to the student and instructor.

Fads of an Old Physician. A Sequel to Plea for a Simpler Life. By George S. Keith, M. D., LL. D., F. R. C. P. E. London: Adam and Charles Black, 1897. Pp. xii–172. [Price, $1.]

The little work to which this volume is the sequel did not impress us with much favor, and in our notice of it we frankly expressed out dissatisfaction. As regards the present work, justice compels us to say that, howsoever strongly it resembles the earlier production, it is a distinct improvement thereon, mainly because it is more logical. If we disregard several minor "fads" which are briefly but sufficiently presented, it may be said that each volume is the exposition of Dr. Keith's major fad, "starvation" diet; and, as is usually the case with hobbies, the subject is immoderately presented. That a deal of truth is present in what the author preaches must be confessed, and in fact they of the medical profession are generally agreed as to the dangers which attend immoderate eating and the ills which follow it. Certainly, therefore, this little book can not but interest us, though we must own a preference for more scientific productions as well as for those which are not expository of self-evident and self-confessed "fads."

The Pocket Therapist: a Concise Manual of Modern Treatment, for Students and Junior Practitioners. (Arranged Alphabetically for Ready Reference.) By Thomas Stretch Dowse, M. D., F. R. C. P. E., etc. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd.; Hirschfeld Brothers, 1897. Pp. 192. [Price, 5*s.*]

This is a book for the pocket. The contents consist almost entirely of brief suggestions as to the treatment of diseases. The author says that he has mentioned only such remedies as his own experience has led him to consider useful, and in this we think he has shown wisdom. Such little books are chiefly of service as an index to the memory, and this one seems to have been prepared with considerable care. It is well printed and substantially bound in flexible covers.

BOOKS, ETC., RECEIVED.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M. D., LL. D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University, etc. Volume II. Diseases of the Respiratory System—Diseases of the Circulatory System and the Mediastinum—Diseases of the Blood—Diseases of the Kidneys—Diseases of the Bladder and Prostate Gland. Illustrated. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. 5 to 941. [Price, $5.]

A Text-book of Mental Diseases. For the Use of Students and Practitioners of Medicine. By Theodore H. Kellogg, A. M., M. D., Late Medical Superintendent of Willard State Hospital, etc. With Illustrations in the Text. New York: William Wood & Company, 1897. Pp. xv–3 to 776. [Price, $6.]

Urinalysis. A Guide for the Busy Practitioner. By Heinrich Stern, Ph. D., M. D. New York: E. R. Pelton, 1897. Pp. 9 to 61.

The Pocket Therapist. A Concise Manual of Modern Treatment. For Students and Junior Practitioners. (Arranged Alphabetically for Ready Reference.) By Thomas Stretch Dowse, M. D., Fellow of the Royal College of Physicians of Edinburgh, etc. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1897. Pp. 192.

Suppression and Prevention of Leprosy. By Albert S. Ashmead, M. D., Late Foreign Medical Director, Tokyo Hospital, Japan. Norristown, Pennsylvania: The Herald Printing and Binding Rooms, 1897. Pp. xiv–94.

The Roller Bandage, with a Chapter on Surgical Dressing. By William Barton Hopkins, M. D., Surgeon to the Pennsylvania Hospital. With Illustrations. Fourth Edition. Philadelphia: J. B. Lippincott Company, 1897. Pp. xi–9 to 130. [Price, $1.25.]

The Standard of Medical Education. The Address of the Retiring President, delivered at the Regular Annual Meeting of the Association of American Medical Colleges, Philadelphia, June 1, 1897. [Reprinted from the *American Practitioner and News.*]

Sanitary Problems connected with the Municipal Water Supply. By Professor W. P. Mason, of Troy. [Reprinted from the *Journal of the Franklin Institute.*]

Can Society Successfully Organize to Prevent Overproduction of Defectives and Criminals? By Barnard Douglass Eastman, M. D., of Topeka. [Reprinted from the *Kansas Medical Journal.*]

The Treatment of Alcoholism. By J. M. French, M. D., of Milford, Massachusetts. [Reprinted from the *Medical and Surgical Reporter.*]

Obstetrical Paralysis of Infants. By W. H. Haynes, M. D., of Brooklyn. [Reprinted from the *Brooklyn Medical Journal.*]

Ueber das Ichthalbin (Ichthyoleiweiss), ein geschmack- und geruchloses Ichthyolpräparat. Von Dr. Arnold Sack. [Sonderabdruck aus der *Deutschen medicinischen Wochenschrift.*]

Ueber intraabdominale temporäre Kompression der Aorta oder eines ihrer grössten Zweige bei gewissen Becken- und Bauchoperationen. Von Professor K. G. Lennander. [Sonderabdruck aus dem *Centralblatt für Gynäkologie.*]

Bullet Wounds of the Abdomen. By W. E. Parker, M. D., of New Orleans. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

Le traitement chirurgical de la surdité et des bourdonnements. Par M. P. Garnault. [Extrait de la *Médecine moderne.*]

Trauma and Carcinom. Von Dr. H. Berger. [Sonderabdruck aus der *Vierteljahrsschr. f. gerichtl. Med. u. öffentl. Sanitätswesen.*]

New Inventions, etc.

A TRIAL FRAME.

By J. H. McCassy, M. A., M. D.,
DAYTON, OHIO.

As shown in the accompanying cut, the author's trial frame consists of two separate devices, one for each eye. It may be attached in front of any spectacle frame or nose glass by the two hook clasps, 2, 2, and the spring clasp, 3. The latter serves to maintain the proper axis of the dial to the frame. The dial 4 is numbered in the ordinary way.

The spring is attached to the lower segment of the dial by two rivets, 5, 5, and by soldering the portion between the rivets. The spring is grooved for the reception of the lenses or made slanting so as to hug the lens close to the dial. The free ends of the spring are thinned to render them more pliable and elastic.

Ordinary cylinder lenses, at any angle, that may have accumulated in the office of the oculist by reason of misfits or otherwise, may have the axis marked on them with a diamond and utilized for testing purposes.

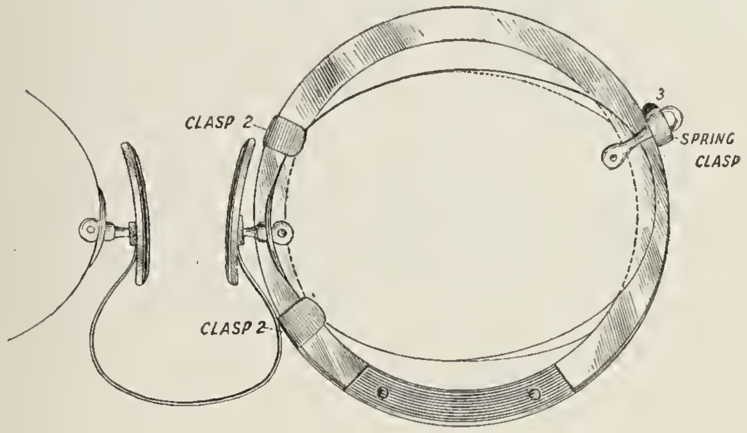
Some clean fabric should be used between the thumb and finger in putting the lens in the trial frame and in changing the axis, else blurring will occur.

In case it is necessary to combine a spherical lens with a cylinder, the sphere may be put in the frame in the ordinary way, while the cylinder lens is held in front by this device.

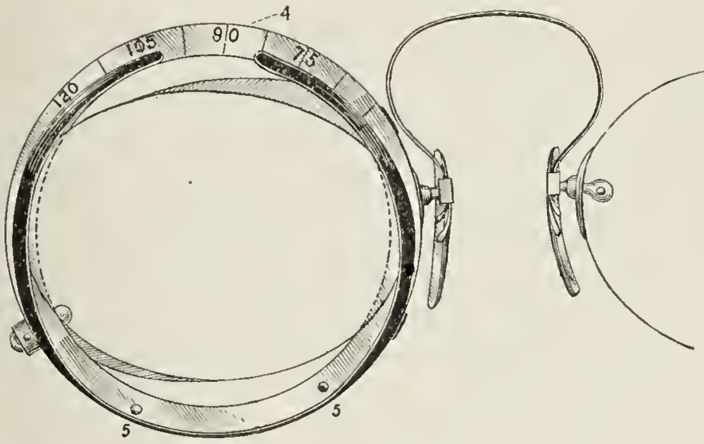
The field of usefulness for the author's trial frame is in testing and fitting for astigmatism in persons who, by reason of their occupation, can not spare the time necessary for the employment of a mydriatic, and in the cases where the angle and strength of the cylinders are doubtful or difficult to ascertain.

In testing, the manifest should be ascertained in the ordinary way. If it appears that a spherical lens is accepted the same is put into the frame. Then one or two or three cylinder lenses are given to the patient to use at home during an evening, instructing him to read a certain length of time with the axis of the cylinder at or near the angle obtained by the manifest. In this way the patient will ascertain by actual trial the strength of the lens as well as the angle most satisfactory to him. The proper cylinder or compound lens may now be ground to order.

It is a fact known to every oculist that many patients are confused by undergoing the test for refraction, and are unable, while under such embarrassment, to give clear cut or proper answers. Consequently the test is defective through no fault of the oculist. Let the patient have the lenses, as herein suggested, in his study room at home without embarrassing or confusing surroundings, and the conditions necessary to arrive at an accurate conclusion are complete. In any case the patient has to fit himself under direction of the oculist.



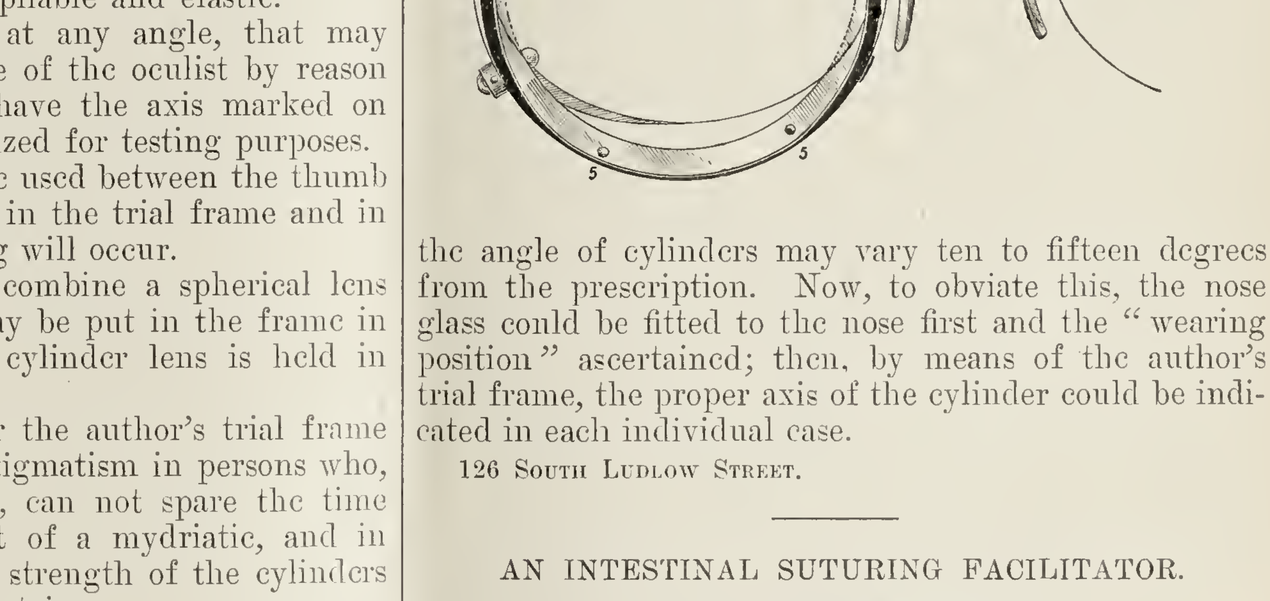
Again, it is a recognized fact that a great many nose glasses either tilt or droop according to the thickness of the nose, which is difficult to measure, and as a result the angle of cylinders may vary ten to fifteen degrees from the prescription. Now, to obviate this, the nose glass could be fitted to the nose first and the "wearing position" ascertained; then, by means of the author's trial frame, the proper axis of the cylinder could be indicated in each individual case.



126 South Ludlow Street.

AN INTESTINAL SUTURING FACILITATOR.

By J. S. Wight, M. D., LL. D.,
PROFESSOR OF OPERATIVE AND CLINICAL SURGERY AT THE LONG ISLAND COLLEGE HOSPITAL, BROOKLYN, N. Y.



This instrument, in its construction, resembles Dr. Powell's urethral dilator, as can be seen by the accompanying cut. *B* represents the intestine from which at *A* a gangrenous portion has been exsected. The shaft of the instrument is seen passing through a small incision in the sound part of the intestine at *P*. The supporting bars of the instrument are separated or brought together by means of the thumbscrew *D*, and when they are in contact with each other they can be passed through the incision of the intestine at *P*. The dilating part of the instrument, as seen at *A*, is included by the severed ends of the intestine, and then expanded by means of the thumbscrew. The cut edges of the intestine are brought together and sutured in the usual way. When the suturing is completed, the instrument is "collapsed" by means of the thumbscrew, and then removed. The "hole" for insertion is now sutured. I have found that this instrument greatly facilitates the operation of "end-to-end" suturing of the intestine. The operation is shorter, easier, and the adjustment of parts more perfect than by other methods. The expansion of the supporting bars may be made to suit any size of intestine. This instrument is constructed by George Tiemann & Co., 107 Park Row, New York. It was invented in September, 1896.

30 Schermerhorn Street.

Miscellany.

The Choice of a Summer Residence in New England.—The dominant idea at the present time, says Dr. F. I. Knight, in the July number of the *International Medical Magazine,* seems to be to escape the intense exhausting heat of the cities and the low inland country, and the entire New England coast and the best parts of its mountainous tracts are being rapidly pre-empted as cooling-off places for the rest of the country. These places, says the author, present great differences of temperature, moisture, wind, and other climatic conditions, and people go from one place to another for various reasons irrespective of this fact. Dr. Knight thinks that a little good advice in this matter would be of great service and even prevent serious consequences.

The seashore, he says, is by no means a proper summer residence for all people, and, furthermore, there are great differences in seashore places. In New England the climatic conditions are typically different in different parts. There are two kinds of country places appropriate for summer residence—namely, places comparatively low in elevation, but far enough north to insure cool nights, and mountainous places which, according to their elevation, afford a dry, rarefied air, very free from germs, cooler days, and often very cool nights.

There are several kinds of sea places which differ greatly one from another, and they are indicated in very different conditions of the system. The coast climate of New England varies greatly according to the varying exposure to the south and east winds. To be cool in summer on the New England coast, says Dr. Knight, one must be where the south wind blows directly from the sea. As the general direction of the line of the east coast runs nearly northeast the whole coast would have the south wind from the water if it were not for the interference of the two capes, Cape Ann and Cape Cod. North of Cape Ann, as far as Hampton, New Hampshire, where the coast line begins to turn decidedly to the east, and north of Cape Cod, especially between Cohasset and Boston, the south wind comes over land, and is a hot wind; whereas along the eastern Maine coast, north of Hampton, New Hampshire, and south of Cape Ann toward Boston, on what is called the North Shore (*i. e.,* of Massachusetts Bay), including Gloucester, Manchester, Beverly, Marblehead, Swampscott, and Nahant, the south wind comes from the sea. As you approach Boston from Lynn the effect of the cape in meeting the south wind is felt, and at Boston it is a hot wind. On the south side of Cape Cod and along the southern coast of New England till it is modified by Long Island, one gets the south wind directly from the water. Everywhere north of Cape Cod the coast is exposed to the east and northeast winds, which may be very cold and raw. The shores of Buzzard's Bay are shielded from the east winds by Cape Cod, and Newport and New London receive the northeast wind modified by the same. The temperature of this region is consequently more equable. While the Beverly shore and the south shore of Cape Cod have the common advantage of being cooled by the south wind direct from the sea, they differ much in other respects. The air of both regions is moist, of course, but that of the Beverly shore is much colder. It is known, says the author, how different the effect of cold and warm moisture is, especially in affections of the respiratory and nervous systems. The wind south of Cape Cod blows quite steadily from the sea, so steadily and strongly as to be physically disagreeable to some people.

There are also the island resorts, where the quality of the sea air is experienced more constantly and the temperature is more equable, but which differ considerably, one from another, in average temperature. The Isle of Shoals is much cooler than Block Island or Nantucket.

There is often an opportunity, continues Dr. Knight, for a family physician to be of great service in indicating the summer residence with reference to patients' characteristics as a family, or with special reference to an invalid or a convalescent member. Dr. Knight states that his object in dealing with these different climatic conditions has been simply to call attention to their existence, especially those along the New England coast, in regard to which, he says, the people, and often their physicians, seem to be unusually ignorant.

Multiple Neuritis following Influenza.—In the *Journal of the American Medical Association* for July 24th Dr. Herman B. Allyn says that the great majority of these cases are instances of peripheral neuritis; in a few the cranial nerves are also involved, and in a few also the spinal cord is at the same time affected. The disease, he thinks, is an intoxication of the nerve trunks, and this intoxication may be sufficient to produce rapid destruction of the nerve fibres or only enough to cause more or less pain—an irritative instead of a paralytic toxæmia. The salicylates, he says, are useful in these cases, probably because they have the power of promoting the elimination of certain toxic agents. Dr. Allyn cites a number of cases from which he draws the following conclusions:

1. Influenza, like other infectious diseases, may be followed by neuritis and multiple neuritis.

2. One sex does not seem to be more liable to multiple neuritis than the other.

3. It occurs most frequently between the twenty-fifth and forty-fifth years, and appears during convalescence in a few days or two or three weeks after the influenza has subsided.

4. It may present sensory, motor, vasomotor, or trophic symptoms, or all combined, but sensory and vasomotor symptoms are more prominent than in diphtheritic and some other causes of multiple neuritis.

5. The great majority of the patients recover as regards restoration of function and power as well as regards life. Five of the patients in his thirty-six

cases referred to in his paper died. In one of Bruns's cases the symptoms resembled those of Landry's paralysis; in the other there was paralysis of the tongue and throat. In Eisenlohr's fatal cases there was general motor paralysis with intense hyperæsthesia of the skin. In Ferguson's case the neuritis was visceral and in Leyden's fatal case there was coincident disease of the cord.

6. Recovery does not usually take place under four weeks and may be delayed for months.

7. The treatment should consist, first, in absolute rest in bed. Anodynes must be given in sufficient dose to relieve pain, when that is a prominent symptom. Morphine hypodermically may be necessary, but may often be replaced with advantage by codeine. The antipyretic anodynes are insufficient in any safe dose if the patient has pains for many days. The salicylate of cinchonidine is distinctly valuable, especially when the pain is not of the greatest intensity. At a later stage potassium iodide and the bichloride of mercury in small doses are helpful. When the pain is in an extremity, firm pressure with a flannel bandage gives great comfort. Blisters over the painful nerve trunks, when they are superficial, are also valuable in relieving pain.

Close watch must be kept on the action of the heart and the character of the breathing. In most of the fatal cases death is due to paralysis of the diaphragm. The closest attention must be given throughout the course of the case to the nutrition of the patient and to the condition of the skin, especially over portions of the body where pressure occurs. So far as possible, the stomach should be reserved for food. Medicine in these cases acts better when given hypodermically, and the stomach is not so likely to be deranged. This caution applies especially to the giving of anodynes.

8. Finally, while the author thinks diphtheria as a cause can be excluded in the cases which he has seen, both from the absence of any clinical evidence of it in the patient or his surroundings and from the fact that diphtheritic neuritis is almost purely motor, yet he can not exclude the poison concerned in the production of follicular amygdalitis—infectious amygdalitis—for sometimes this is associated with influenza, and it may produce as much headache, backache, and prostration as usually characterize the onset of influenza itself.

Ablation of the Breast, the Arm, the Clavicle, and the Shoulder-blade for Cancer.—The *Gazette hebdomadaire de médecine et de chirurgie* for July 15th publishes a report of a recent meeting of the Société belge de chirurgie at which M. Depage presented a patient in whom cancer of the breast had provoked a considerable œdema of the arm and of the shoulder. M. Depage had hesitated about operating, but the family had urged it, and, as the patient was subjected to such horrible pain, he decided to operate. He considered this operation as palliative and not radical, but in order that the pain should not return in case a relapse should occur, he had been careful to resect the brachial plexus near its juncture with the spinal column. Recovery occurred rapidly without the least local symptom and with union by first intention throughout.

However, during the first few days which followed the operation, M. Depage thought it best to practise injections of artificial serum. After these injections had been thrown into the cellular tissue of the thigh and the buttock, dry gangrene was produced over an area as large as the palm of the hand and including part of the cellular tissue. The eschar was cast off in about three weeks, and exposed the muscular layer; at the present time the wound was healing. This was the second time that M. Depage had observed this accident. He attributed it to the excessive quantity of liquid injected in the same place, and, in order to avoid such consequences, he recommended massage immediately after the injection.

The Ear Complications of Influenza.—At the recent meeting of the American Otological Society, Dr. Wells P. Eagleton, surgeon to the Newark Eye and Ear Infirmary, read a paper on this subject.

Since the winter of 1889-'90 the epidemics of influenza, he said, had varied in degrees of severity, but on the whole had shown a tendency toward a gradual decline. With the appearance of each epidemic the number of ear patients applying for treatment at the clinics had decidedly increased, and this increase could be traced directly to the influence of influenza in not only lighting up old or dormant ear troubles, but also in affecting many previously normal ears.

The frequency of this complication was best illustrated by the observations of Bowie, who found that out of a hundred and fifty cases of influenza occurring among the natives of a tribe in central Africa, in thirteen there were aural infections, and this among a people not subject to ear diseases, while in districts where such affections are frequent the proportion was, Dr. Eagleton felt sure, much larger. This frequency was easily explainable when we considered the severity with which influenza attacked the whole upper respiratory tract, and the intimate anatomical relation of the ear to this tract.

Whether this was always due to a direct invasion of the middle ear by the bacillus of influenza was doubtful; but that this did occur has been proved by Scheibe, who had demonstrated the presence in the aural secretion of a bacillus which had the characteristics of Pfeiffer's bacillus.

Of the cases of catarrhal otitis which so frequently complicated influenza, giving rise only to slight pain and transient deafness, little need be said, as they differed in no way from the simple cases, but the cases that went on to suppuration might present one of three conditions that were distinctive, all probably due to the direct influence of the presence of Pfeiffer's bacillus:

1. Distinctive types of hæmorrhagic otitis.
2. Primary mastoiditis or periostitis before the involvement of the middle ear, due apparently to direct infection by the bacillus and not to extension from the nasopharynx.
3. Rapid caries and necrosis of the ossicles or mastoid (of very frequent occurrence).

In addition, there were minor points of difference from the simple cases, such as the greater severity of the pain and its longer duration, the more frequent persistence of the tinnitus, and the occasional serious involvement of the labyrinth after apparently slight affections of the middle ear.

There were three distinct forms of influenza otitis with hæmorrhages into the membrana tympani, which, however, if properly treated, had not in the author's experience unfavorably affected the course of the disease, although the invasion was apt to be severe.

The presence of the influenza bacillus exerts, says Dr. Eagleton, a very unfavorable influence on the bony structures of the ear, often converting apparently simple cases of acute suppurative otitis into very malignant ones with rapid destruction of bone, and this without marked symptoms; while in not a few instances the inflammation has developed in the bone itself either as a primary periostitis or a mastoiditis. This tendency to rapid bone destruction should be constantly kept in mind and can be prevented only by early and if necessary repeated paracentesis, and even with this some cases will require an early opening of the mastoid to stop the destructive advance of the disease. Failure to perform paracentesis early has in several cases in his experience resulted in caries or necrosis, which might have been avoided, and in one case, that of an old gentleman, ended in complete destruction of both malleus and incus, with almost total deafness of the affected ear.

In the cases, however, in which the mastoid is affected, says Dr. Eagleton, paracentesis alone can accomplish little. Knowing as we now do that in all cases of acute otitis the inflammation never remains entirely confined to the middle ear, but always involves to a greater or less degree the mastoid, and realizing the great tendency to rapid caries and necrosis in influenza otitis, we should not hesitate, he says, to open the mastoid early whenever the acute symptoms are not quickly relieved by paracentesis or whenever protracted and profuse suppuration follows.

The Mississippi Valley Medical Association.—The executive committee met recently in Louisville, in conjunction with the local committee of arrangements. There were present Dr. Stucky, Dr. Grant, Dr. Mathews, Dr. Love, Dr. Holloway, and Dr. Reynolds. It was determined to make the coming meeting, to be held in Louisville on the 5th, 6th, 7th, and 8th of October, the largest and best in the history of the association, and we learn that everything points to a fulfillment of this endeavor. The railroads will make a round-trip rate of one fare and a third or perhaps one fare. The address in surgery will be delivered by Dr. J. B. Murphy, of Chicago; the address in medicine, by Dr. John V. Shoemaker, of Philadelphia. Titles of papers should be sent to Dr. H. W. Loeb, secretary, St. Louis.

The New Tuberculin.—The *Deutsche medicinische Wochenschrift*, says the Berlin correspondent of the *Lancet*, contains an article by Dr. Bussenius concerning the treatment with Dr. Koch's new tuberculin. Nineteen patients were treated, twelve of whom suffered from laryngeal tuberculosis, two from pulmonary tuberculosis, four from lupus, and one from asthma. The duration of the treatment varied from twenty-nine to sixty-five days. When it was finished, injections of the old tuberculin were made with the result that none of the patients showed a reaction. In accordance, says the writer, with the recommendations of Dr. Koch, the injections were begun with very small quantities and these were somewhat quickly increased, for Dr. Koch believes that reaction may be avoided in this way.

Dr. Bussenius found that the maximum dose was reached without febrile reaction in only four cases, while in the others the temperature generally rose after the injections. He stated that the fluid purchased from the Höchst factory seemed to vary in strength. For instance, the preparation issued on June 4th caused not only fever, but also other and undesirable symptoms, such as swelling of the lymphatic glands, debility, etc., but bacteriological examination nevertheless showed it to be sterile; the preparation sent out on June 11th caused fever, which was ushered in by a rigor and lasted about twenty hours, the patient's temperature being 106.3° F. In one of the cases of lupus the injection of a cubic centimetre of this tuberculin caused a swelling of the diseased cutaneous tissues similar to that observed with the old tuberulin. It was remarkable that the same patient had formerly received four cubic centimetres from another bottle without any reaction. This result showed that the technical details of the preparation of the tuberculin still needed improvement in order that the product might be always uniform. Great precautions were still necessary when a fresh bottle was used, the activity of which was not yet ascertained. The pulse and the respirations became more frequent simultaneously with the rise of temperature; two patients complained of oppression and excessive perspiration; disturbances of the digestion were never observed, and the appetite was not obviously influenced. In seven patients an increase in weight was observed and in five a decrease, while in two it was not changed at all. None of the three hundred and thirty-four injections was followed by suppuration, but in some instances there was an infiltration round the place of the injection, which passed off without treatment. As to the effect of the treatment on the local process, continues the writer, it was stated that in two cases of pulmonary tuberculosis complicated by syphilis the cough and excretion where tubercle bacilli were present very soon disappeared; in laryngeal and pharyngeal tuberculosis there was no obvious amelioration in any instance. The local reaction was very slight, and there was no danger of laryngeal œdema, so frequent with the old tuberculin. The best results were obtained in cases of lupus. Two of the patients suffering from this disease recovered completely in seven and nine weeks respectively after the beginning of the treatment. In one case the healing went on very well and the greatest part of the lupoid area was in a state of cicatrization; but the injection, unfortunately, had to be stopped owing to the above-described troubles due to excessive energy of the tuberculin. The fourth case of lupus was still in an early stage of the treatment.

Dr. Bussenius, continues the writer, is not yet disposed to give a definite opinion concerning the efficacy of the new tuberculin, but the results attained seem to fall short of the expectations of Professor Koch. Another short communication on the new remedy, says the correspondent, is made by Professor Schultze, of Bonn, who has treated nine patients up to the present time. The reactions so characteristic of the old tuberculin were never observed. In one case a laryngeal affection, probably of a tuberculous nature, made its appearance during the treatment, and the patient consequently refused to have the injections continued. Another patient, who suffered from diarrhœa after the injections, lost four pounds and a half in weight and declined further treatment. In four cases there was no apparent alteration of the patient's general condition, in one case of pleurisy there was a general improvement, and in two other cases a marked amelioration of the laryngeal affection was observed. Professor Schultze said that it was quite impossible to determine whether the amelioration was due to the treatment or to the general hygiene and dietetic measures.

The Senile Liver.—Dr. Tonnel, in the *Bulletin de la Société centrale de médecine du nord*, March 1897 (*Nord médical*, July 1st), remarks that the senile process does not spare the liver any more than it does the other organs of the normal individual. More or less marked modifications enable us to estimate the exact extent of evolutionary sclerosis and of xerosis during life and after death. These modifications, he says, are of a clinical nature (atrophy and diminution of the bile-producing and the urea-producing functions); also of an anatomo-pathological nature (diminution of the weight, and sclerosis by hyperplasia of all the connective tissue which enters into its constitution).

Senile liver terminates fatally after steatosis when after xerosis of the arteries a veritable arterio-sclerosis follows which loses its evolutionary character and becomes pathological.

Albuminuria of the Newborn.—At a recent meeting of the Société d'obstétrique et de gynécologie de Bordeaux, a report of which appears in the *Gazette hebdomadaire de médecine et de chirurgie* for July 8th, M. Audebert and M. Arnozan presented the following results of their investigations concerning the albuminuria of the newborn: 1. Cases in which the mothers had no albuminuria. Of ten children, only one showed traces of albumin. 2. Cases in which the mothers presented albuminuria and eclampsia. *a.* The urine contained a hundred and five grains of albumin to the pint. Labor was induced and a living child was born. The mother died some hours afterward. The child's urine contained three grains of albumin. *b.* The patient was a primipara, and the urine contained sixty grains of albumin to the pint; when labor occurred it contained only forty-five grains. The child's urine contained albumin, but the quantity was too small to be estimated. *c.* A multipara with eclampsia. The urine contained a hundred and twenty grains of albumin to the pint. Labor occurred at eight months and a half and a living child was born; the patient was in a comatose condition; the child's urine contained two grains and a half of albumin. *d.* The patient was a primipara and presented only slight albuminuria with very little œdema; there were nineteen grains of albumin to the pint. No albumin was found in the child's urine.

M. Fieux stated that in similar investigations two children who presented albuminuria had died, and that renal lesions had been found in them. These facts he considered important, as they might add value to the opinion held in regard to the hereditary transmission of eclampsia. Girls born with renal lesions might have albuminuria and remain predisposed to eclampsia. M. Lefour thought the facts were in contradiction to the theory.

M. Audebert said that M. Gaulard was of the opinion that nearly all women who were attacked with scarlatina suffered in subsequent pregnancies with albuminuria or eclampsia. M. Pinard, he continued, was opposed to this excessive generalization, and both M. Arnozan and himself had observed women who had had this fever, but presented no albuminuria during pregnancy or labor.

The Explosion of a Pastille containing Potassium Chlorate.—M. Lourdel, says the *Progrès médical* for July 3d, relates the following instance in the *Union pharmaceutique:* A physician of Rheims, while visiting a patient, kept one of his hands in his coat pocket and rubbed mechanically, one against the other, two pastilles which he found in the pocket. Suddenly there was a slight explosion; at the same time he felt a rather sharp pain in his hand. After the first moment of surprise was over he discovered that the bottom of his pocket was completely burned and that his underclothing was scorched. On one of his fingers there was a burn of the third degree. He recalled the fact that several days before he had put two pastilles containing potassium chlorate and one containing sugar and chlorate in his pocket. He found the latter broken in several pieces, and one of the pastilles containing the potassium chlorate was intact, but of the other no traces could be found. The explanation seemed to be that the physician had rubbed the pastilles one against the other and, on contact, there had formed a small quantity of explosive powder which, becoming ignited, had caused the sudden decomposition of the pastille.

Chronic Articular Rheumatism.—At a recent meeting of the German Congress for Internal Medicine, a report of which is published in the *Presse médicale* for July 3d, Bäumler endeavored to show what should be comprehended under the term chronic articular rheumatism. He began by showing that in nearly every country this term served to designate a peculiar clinical syndrome; that the chronic articular rheumatism of the French authors was, in Germany, the chronic form of acute articular rheumatism and corresponded to arthritis deformans; that this term arthritis deformans was understood in a different way by physicians and surgeons. In order, therefore, to avoid confusion and to establish an absolute distinction between acute articular rheumatism and chronic articular rheumatism, two affections which were in all points distinct one from the other, Bäumler proposed to designate the latter under the term arthritis deformans. Under this term, or polyarthritis deformans, then, Bäumler comprised the cases of chronic arthritis of subacute evolution which were often prolonged for many years, habitually apyretic, attacking a large number of the articulations, and causing very pronounced deformities in them.

The symptomatology of polyarthritis deformans was well known, and Bäumler could add nothing to it. The patients, he said, were more or less powerless, cachectic or somewhat given to embonpoint. In all cases there was to be found atrophy of the muscles in connection with the diseased joints. The skin, especially on the deformed fingers, was thin, shiny, tense, and often pigmented near the groove of the nail, which sometimes presented stripes running lengthwise or across it. The skin of the palmar surface was red and hot and seemed moist. Characteristic crackings were found in the diseased articulations, which were produced on movement and were caused by the rubbing of the denuded articular surfaces. The articular capsule was thick, the synovial membrane was proliferous, and the articular extremities were deformed, and were dislocated or subluxated one upon the other. There was very little or no fever, unless there was a complication or an attack of arthritis in an articulation previously free from disease. Nutritive disturbances were generally absent; glycosuria and albuminuria, when they existed, were the result of complications.

The anatomo-pathological lesions, said Bäumler, varied with the evolution of the disease. In the beginning there were to be found only a thickening of the capsule, an intracellular effusion, and, sometimes, proliferation of the cartilage. Later the cartilage was destroyed; but on the border, in consequence of modifications in the pressure, there was proliferation of the cartilage with partial ossification. There were modifications of the pressure which brought about atrophy and hypertrophy of the bony parts.

The cause, or the causes, Bäumler said, of polyarthritis deformans were not yet known exactly. All the conditions which might predispose the patients—poverty, loss of organic liquids, nervous exhaustion, previous articular affections, even acute articular rheumatism—might play a part in the predisposing causes. The disease did not attack the poorer classes in an excessive manner, and it had not been shown that there existed a pathogenic relation between polyarthritis deformans and the organic or functional diseases of the central or peripheral nervous system.

Bäumler thought that the bacteriological researches of Schüller, Bannatyne, and especially Wohlmann, furnished a certain basis for the hypothesis of an infectious ætiology. Finally, in a disease which lasted for years it was possible that several causes and various infections acted together or successively.

Ott presented a communication on the treatment of polyarthritis deformans. He showed, first of all, that, according to the prevailing ideas concerning the nature of this affection, the therapeutic measures in use might be divided into three classes: 1. The disease resulted from a disturbance of nutrition characterized by an excessive production of acids, and this might be combated by large doses of alkalines. 2. It was supposed that the nervous system was a factor, and the patients were treated with nervines, electricity, hydrotherapy, and tonics. 3. The disease was supposed to be of an infectious nature, and antiseptics were administered internally and externally. According to Ott, the antiseptic treatment was, in a general way, the one which gave the best results, but the empirical treatment played a great part.

In acute exacerbations rest in bed and a careful diet were indispensable; besides, Priessnitz's compresses and wrapping the articulations in cold bandages rendered great service. Painting the articulations with methyl salicylate might also be recommended. When the pain was very violent, narcotics might be used without danger. As a revulsive, tincture of iodine was useful and harmless. When articular effusions were very abundant and prolonged it was necessary to puncture the articulation. Salicylate preparations, colchicum, and salol were to be given.

During the chronic period it was especially necessary to cause absorption of accumulated exudates by external means. Revulsives were employed, such as tincture of iodine and ichthyol. If articular effusion existed, the articulation was to be compressed.

Baths should be employed only when all symptoms of irritation had disappeared. As the patients were, in general, in a bad condition regarding nutrition, hot baths, sand baths, and mud baths were particularly indicated. The baths of mineral waters were still more frequently prescribed as follows: 1. Ordinary mineral waters. 2. Waters containing sodium chloride. As salt water had an exciting action, the temperature of these baths should not be too high. 3. Waters containing sulphur.

The employment of diaphoretics might also be added to the other modes of treatment, also that of Scotch douches, mechanical therapeutic procedures, especially massage, which was useful after the processes had diminished, active and passive movements, and electricity. During the winter the patients should go to a southern climate. To ameliorate the general condition, quinine, iron, and cod-liver oil should be given. Potassium iodide, ichthyol, tincture of iodine, and arsenic should be administered internally. In cases of grave alterations of the articulations, when the local processes were allayed, surgical intervention was sometimes indicated, such as resection of the capsule, osteotomy, etc.

A Curious Instance of Tattooing.—At a recent meeting of the Nancy Société de médecine, a report of which is published in the *Indépendance médicale* for July 14th, M. Ginestous presented a collection of photographs representing tattooing on the body of a soldier who was in the military hospital of Saint-Nicolas. They were as follows:

I. On the anterior surface of the body. 1. A chain of oval rings extending from one clavicle to the other, passing by the interclavicular notch. This chain terminated on each side in a quadrangular medallion the centre of which was tattooed in red. 2. Near the heart was a dagger held in a woman's hand. The dagger seemed to be thrust into the skin, which, at this spot, was tattooed in red to imitate drops of blood. Underneath was a bunch of flowers in red and blue. 3. In the left antero-lateral thoracic region there was a child. 4. The abdomen was covered with tattooing as far as the pubes. This represented a woman in a rather *décolleté* costume seated at a table spread for dinner. 5. On the prepuce there was an anchor, designed and tattooed by the patient himself.

II. In the posterior thoracic and dorso-lumbar regions. 1. From the interscapular region to the lower part of the lumbar region an immense tattooing extended which represented the punishment of the traitor Dreyfus. This was reproduced from a picture in the *Journal illustré*. This tattooing was very curious and remarkably fine in all its details and as a whole.

III. The left arm. 1. On the deltoid region, the head of a very pretty woman. 2. On the anterior surface of the arm, a crescent with the head of a woman. 3. On the outer side of the arm, the bust of a sailor. 4. On the upper posterior surface of the arm, a bunch of cherries. 5. At the bend of the elbow, the head of a zouave. 6. On the epicondylar region, a death's head with two cross bones, made by the subject himself without a model. 7. On the forearm, a very pretty bunch of roses and buds, in two colors. 8. On the outer posterior region of the forearm, above the wrist, the head of a lion, the mouth of which was marked in red; this was made by the subject himself without a model. 9. On the back of the hand, an anchor. 10. On the fourth finger, a ring with a bezel.

IV. The right arm. 1. On the deltoid region, the head of a musketeer with curled hair, and a hat with feathers. 2. On the anterior surface of the arm, a bunch of flowers. 3. On the outer posterior surface, a woman dressed like a sailor. 4. At the bend of the elbow, three fishes interlaced. 5. On the anterior surface of the forearm, a snake with its tail wound around the trunk of a tree; the snake seems to be in the act of biting a child. 6. On the posterior surface of the forearm, below the elbow, the head of a woman. 7. On the back of the hand, a heart pierced by an arrow. 8. On the wrist, a bracelet, designed by the subject.

V. The left leg. There was no tattooing on the thigh, but from the patella it began as follows: 1. Over the patella and around it, a rose-window, made by the subject. 2. On the outer anterior region of the leg a serpent was wound, which was tattooed by the subject while he was still at school. 3. On the inner surface of the leg, this inscription was found: "*Vive le 14 avril,* *1899!"* This would have been the date of his freedom from service if he had not been imprisoned at Martinique. 4. On the anterior surface of the foot, a rose.

VI. The right leg. The thigh was not tattooed. 1. Over the patella, a butterfly, made by the subject. 2. On the outer anterior surface of the leg, a bird facing a serpent on the right leg; also made at school. 3. On the anterior surface of the foot, a rose, made by the subject.

Salophene in the Treatment of Articular Rheumatism.—In the *Presse médicale* for July 10th there is an article on this subject by M. Galliard, who relates the histories of a number of cases of acute, subacute, chronic, and blennorrhagic polyarthritic rheumatism in which he employed salophene.

In the cases of chronic polyarthritic rheumatism, he says, the negative results of this treatment were not surprising; in the cases of blennorrhagic rheumatism so many other medicaments failed that even a partial success with salophene was a matter of rejoicing. The amelioration obtained in one case was comparatively rapid; in another case the drug did not prevent the tumefaction or the pain, and the patient could not sleep without taking antipyrine; however, says M. Galliard, on the whole, the results were not very unfavorable.

In common subacute rheumatism salophene was not without influence in some cases. M. Galliard's conclusions concerning the action of this drug are as follows: 1. It is particularly in acute polyarthritic rheumatism that the efficacy of salophene may be studied conveniently. 2. This drug is capable of suppressing the pain, of combating the tumefaction, of causing the disappearance of the fever, and of preventing visceral tendencies. 3. It should be administered to adults in the beginning in daily amounts of ninety grains, fifteen grains to be taken at a time in unleavened bread. 4. M. Galliard's patients always tolerated it well; there was no malaise, nausea, vertigo, or buzzing in the ears. In one case only it seemed to keep up the agitation which a dose of sodium salicylate had given rise to. It sometimes stimulated diaphoresis. 5. M. Galliard had not observed the remarkable results from the use of salophene which the sodium salicylates gave in some cases of acute rheumatism. He thinks it is less rapidly efficacious than sodium salicylate given in equal doses.

The Influence of Light on the Skin.—In the July number of the *British Journal of Dermatology* Dr. Robert L. Bowles states that he has for many years been engaged in investigating the effects of sunlight on the human body, and especially the penetrating effects of rays reflected from snow and other surfaces. Professor Röntgen, he says, finds that certain rays generated or excited by electrical action penetrate most of the human tissues and other substances, and are stopped by substances of a different nature. The author, on the other hand, has demonstrated that reflected luminous or photo-chemical rays also penetrate the human skin into the deeper tissues beneath and produce within them great and important changes. He gives the following summary of facts and conclusions of various phenomena observed by him from time to time:

1. That heat *qua* heat is not the cause of sunburn.

2. That there is strong reason for believing that sunburn is caused by the violet rays or ultra-violet rays of light reflected from snow, and that it is not necessarily of the same quality as that which is incident.

3. That Captain Abney finds that the violet or ultraviolet rays are very strong at high altitudes, and believes that altitude has much to do with sunburn.

4. That altitude alone does not explain sunburn, for one may be unburned on rocks, say at ten thousand feet, and yet become immediately affected on descending to a glacier three or four thousand feet lower down.

5. That sunburn and snow-blindness arise from similar causes, and that sunstroke and sun fever may be associated with the effects of penetrating light rays.

6. That rays from the electric light produce much the same results as sun rays reflected from snow.

7. That the bronzing of the skin and the browning of the wooden châlets are probably produced by rays reflected from snow.

8. That various pigments, but chiefly those containing red and yellow, stop or alter reflected rays and prevent the physiological and pathological changes usually due to them.

9. That freckles, which are but the milder effects of luminous or chemical rays, stop the penetration of those rays through the skin.

10. That the sometimes very serious inflammatory changes in sunburn and in what Mr. Hutchinson designates "summer eruptions" are due to the penetration of reflected luminous or photo-chemical rays through the skin to the deeper tissues beneath.

11. That photography often demonstrates the existence of freckles and, report says, various eruptions deep in the skin which are perfectly invisible to the naked eye, showing that the luminous or photo-chemical rays are stopped or altered by them, and not reflected back, as no change is produced on the negative—an effect which suggests that these photogenic rays have penetrating powers as yet unknown.

12. That the wood of Swiss châlets is burned perfectly black (carbonized) on its surface by rays reflected from snow, which rays in time penetrate deep into the substance of the wood and change it to a dark-brown color.

13. That the first effect of snow rays on a new châlet is shown by its action on the resin of the wood, which "sweats out" and leads more easily to the charring of the woody fibre itself and the subsequent changes in the deeper parts.

14. That Captain Maude, R. E., has shown from his own personal experiences and from experiments on many friends, that solar rays in India produced sun fever of a very serious kind, which was entirely prevented by the wearing of an orange lining to all his clothes and inside his hat. These experiments demonstrate the penetrating power of light rays through clothes unprotected by color, and their important influence on health. In relation to this, the author has shown that a lady wearing a linen blouse with red and white stripes was strongly marked with red and white stripes on her shoulders, but the red line on her skin corresponded with the white lines of the linen—that is, the red stripes had completely stopped all rays from affecting the skin beneath them.

15. That the author has often shown that rays reflected from certain surfaces—such as water, gold and silver lace, white walls, white veils, certain clouds and mists—act physiologically in a peculiar manner and quite differently to direct light, and that some physical change hitherto unexplained must take place in light during or after reflection.

16. That in relation with the foregoing are those marvelous changes in the vegetable kingdom connected with the formation of chlorophyll and the deposition of starch.

From these and many other observations Dr. Bowles says that he can not help feeling that Röntgen rays may be modifications only of ordinary light, and that their further elucidation must go hand in hand with a further inquiry into the profound changes caused by reflection to which he has above referred. It need not necessarily be assumed, he thinks, that what we call darkness implies an absence of all the forms of light.

In August, 1896, the author, assisted by Mr. Travers, undertook some experiments to discover the cause of the radiant energy from snow being so much more irritating to the eyes and skin than direct energy from the sun, as follows:

1. To show the relative values of sunlight and snowlight in freeing iodine from its combination with hydrogen.

2. To test the relative effects of sun on xxx Paget's plates, inclosed in cases made of aluminum and cardboard, in producing pictures like those of Röntgen.

These exposures, says Dr. Bowles, were effected on snow at an elevation of eight thousand and forty feet, near the hut of the Ober Aletch Glacier, on three consecutive days. The weather was bad and uncertain, but there was *some* sunlight, and some interesting and definite results were obtained.

Bottles containing equivalent proportions of a sulphuric-acid solution and potassium iodide were fixed in cases and exposed simultaneously to the sun and snow; some bottles were coated with pigments, others with cloth of various colors, but each case contained also some of the solution in an uncovered bottle as a control experiment.

The results were expressed in iodine equivalents, and they appear, he says, as Mr. Travers expresses it, "to indicate that the actinic value of the reflected light from snow is somewhere about 0.7 to 0.8 of the value of the direct rays of the sun."

The x-ray plate exposed to the sun displayed skiagraphs of a piece of tin, whereas on the plate exposed to the snow no change could be detected; but as there are reasons for the possibility of this plate having been spoiled, this experiment was not conclusive. The author quotes Mr. Travers, in his remarks on the experiments, as follows:

"In dealing with the published accounts of the cases of sunburn and dermatitis produced by the so-called x-rays, it is not at all certain that the injury done to the hands and arms of the operators was due to the rays which are capable of penetrating aluminum sheets, etc. We know that the radiations from a Crookes's tube include rays which come within the *visible portion* of the spectrum, and it is *to these rays* that we may attribute the power of producing sunburn.

"Further, while it takes a very long time to produce sunburn in the neighborhood of a tube which will fog a photographic plate, contained in a dark slide, in a few seconds, light reflected from the snow will sunburn in a very short time, but will not fog a plate in a dark slide.

"In a paper which appeared either in the *Lancet* or *British Medical Journal* a few weeks ago, it was shown that the effect produced by certain kinds of light—*e. g.*, light from incandescent gas or arc lamps—produced injurious effects. The injury could not be attributed to the presence of a greater intensity of ultra-violet or violet light than was present in sunlight, but was due to the absence of 'red' radiation.

"In the reflected light from snow the heat rays are nearly entirely absent, the violet (chemical) rays would be present with almost the same intensity as in the direct sunlight.

"Considering the lack of evidence in favor of the x-rays pure and simple being a cause of dermatitis similar to sunburn, it is worth while reviewing the facts in support of the theory that the true cause is to be found in the violet or chemical rays, or in the increase of intensity of the violet rays with regard to the intensity of the red rays.

"I think that the facts cited in your paper (*British Medical Journal*, March 7, 1896, furnish sufficient support."

Here, continues the author, from an entirely physical point of view, Mr. Travers, like others, arrives at conclusions similar to his own—namely, that the vital changes on the skin are due to the chemical rays, and apparently to those rays alone, and that the rays issuing from a Crookes's tube are not an entirely new form of energy distinct and separate from light, but contain a proportion of luminous and chemical rays, and that light, as such, as well as the divisions into which it can be split up, may penetrate wood, clothing, and the human tissues.

Dr. Bowles refers to Dr. Unna, who, in 1885, dealt very fully with the subject of pigmentary changes in the cutis, and suggested that they depended on the effects of the chemical rays, and that curcuma and colors acting on the light rays would prevent changes taking place. He refers also to an excellent paper by a Dr. Hammer, of Stuttgart, entitled The Influence of Light on the Skin, in which the author deals with the subject first biologically—for example, the action of light on worms and other sightless creatures influenced by light through the skin. On the physical side he quotes the experiments of Terrier, Malakoff, and Widmark. From the beginning to the end, Dr. Bowles says, he found Dr. Hammer's work entirely corroborative of his own, but thinks that Dr. Hammer is not sufficiently impressed with the important fact that reflected light burns much more rapidly than direct.

Phtheiriasis Capitis.—In the June number of the *Bristol Medico-chirurgical Journal* we find the following, attributed to the *Guyoscope:*

There was a young lady called Margery,
Whose head was a walking menagerie.
Folks said, "You should wash,"
But she answered, "Oh, bosh!
I'll apply some unguentum hydrargyri."

A Change in the Form of the Heart under the Influence of Racing.—The *Indépendance médicale* for July 7th publishes a report of the proceedings of the Société de biologie, in which it is stated that M. Capitan and Mademoiselle Pokrichkine studied the changes by Bianchi's method. They found at first that, in a normal person who took part in running contests, the aspect of the heart did not change. In subjects who presented intestinal or nervous troubles they found that, in certain cases, owing to the impressions made by the examination, the heart increased in size; that this increase was much more considerable after racing. In other cases the heart diminished in size; sometimes the heart moved bodily from right to left or from left to right.

THE NEW YORK MEDICAL JOURNAL, AUGUST 14, 1897.

Original Communications.

TUMOR OF THE SPINE.*

By WALTER E. CLADEK, M. D.,
RAHWAY, N. J.

The patient was a man fifty-one years old; temperate; a farmer by occupation. He had always been a healthy man. In May, 1896, he was taken with a pain in the right side, between the ribs and the ilium, caused, as he thought, by sitting in a wagon in a cramped position for some hours while leading a horse. The pain seemed neuralgic in character, and at times would shoot down to the end of the penis and to the right testicle; at the same time he passed urine frequently, and it was loaded with uric-acid crystals. His appetite was not good, and he suffered from indigestion—the latter probably aggravated by bad teeth and later on by artificial teeth, which he could not get accustomed to. His bowels were constipated, and he seemed to tire easily whenever he attempted to work. He was a large, well-built man, and had always been accustomed to do hard farm work. Calomel, followed by citrate of potassium and the free drinking of water, cleared up his urine and the pain seemed to get better for a time. About a month later, some time in June, he saw me again, with the condition about the same; the pain had not changed in character and the urine was still loaded with uric acid.

On July 4th he drove a horse in a trotting race and was thrown from a sulky. This shook him up pretty well, but did not confine him to bed. All this time he was gradually losing flesh and becoming anæmic, and his disposition had changed to one of extreme irritability, and there was loss of sexual desire. From the 1st of August there was a slight fever, from 99° to 100°, rarely reaching 101°. Quinine and Warburg's tincture made no impression on it. His stomach had become so irritated that he could not take much liquid, and the water drinking had to be discontinued. He had the general appearance of malignant disease. Piperazine had no effect in the uric-acid elimination or the pains.

On the 3d of October Dr. E. G. Janeway examined him thoroughly. There was nothing abnormal discovered, on physical examination, in any of the organs; there was no spinal tenderness and the reflexes were normal. His opinion was that "the patient looked like a man with a malignant growth, possibly of the kidney; would have to wait and see." About the end of October he had become so weak that he was obliged to go to bed. From now on the pain in the side became more intense, and at times it would dart down the right thigh and leg, leaving the side; then, after a few days, the left leg became painful and the right better, and then the left shoulder and left side of chest. Morphine was necessary to relieve him. The bladder irritation still kept up. Up to the 15th of November he could arise from bed unassisted and take a few steps. On the night of the 15th he suffered from frequent urination, and on the morning of the 16th could not pass any urine. On attempting to stand he found loss of power, and during the next twenty-four hours there was almost complete paralysis of the lower extremities, and of the bladder and rectum. Sensation was present, but dulled. From now on up to the time of his death, December 9th, he sank rapidly, and had almost complete loss of sensation and all motion. A large bedsore developed. The bladder was irrigated twice daily, and he was kept free from pain by morphine. The lower region of the spine was sensitive on pressure, but there was no marked enlargement.

Dr. George W. Jacoby saw him on the 30th of November and diagnosticated malignant growth of the spine. He died December 9th. There was no history nor any evidence of syphilis. Iodide of potassium in large doses was tried, but he could not take it. Consent was obtained to make a limited post-mortem examination. In opening the spinal canal the arches of the vertebræ were somewhat softened, so they could almost be cut through with bone forceps. The growth seemed to spring from the dura, and completely filled the spinal canal and crowded out through the spinal openings. There was a slight prominence over the lower dorsal and upper lumbar vertebræ. The bodies of the vertebræ were softened. The growth was of a grayish, brainy looking substance. The cord was not involved, except by pressure of the growth. The growth extended from the second lumbar up to and beyond the ninth dorsal. The cord was not adherent to the pia. Abdomen not opened. During the course of the disease there was no herpetic eruption, no spasm, nor atrophy of muscles, beyond the general wasting.

Phillip Zenner, in the *Reference Handbook*, vol. vi, p. 591, says: "It is often difficult or impossible to diagnose the presence of tumors. If soft and slow in growth, they produce scarcely any symptoms. In others the clinical history is very obscure. Especially in the beginning, when pain may be the only symptom, is the diagnosis doubtful. . . . Diagnosis must be based on, first, the presence at the same time of both severe irritation symptoms—severe pain, muscular spasms, etc., and paralysis; secondly, the gradual increase both in the intensity and extent of the symptoms, especially the indications of lateral extension of the disease from one side of the cord to the other; thirdly, local pain, tenderness, and immobility of the spine in the neighborhood of the tumor and increase of pain on movement." The patient had none of these symptoms except the pain from root irritation, and some pain in the back on motion. The back pain did not come until after the compression symptoms.

Microscopic examination of the specimen showed it to be a spindle-celled sarcoma.

TWO CASES OF PREGNANCY FOLLOWING VENTROFIXATION OF THE UTERUS.*

By A. M. NEWMAN, M. D.

In reporting these cases I hope to add a little to the question of ventrofixation for chronic reducible and irreducible retrodisplacements during the period of uterine activity by its effect upon future parturition.

Suspensio-uteri operation first saw the light of day twelve years ago this past April in the hands of Dr. Howard A. Kelly, but only during the past four or five years has it received the general attention it merits from European and American operators.

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* Read before the Society of the Alumni of the City (Charity) Hospital, May 12, 1897.

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This pathological position of the uterus is not an uncommon one, as you all know; it is exceedingly frequent. Dr. Mundé recently reported eight hundred and ninety-five cases of displacement, of which four hundred and five were in retroposition. This compares favorably with like reports from other careful observers. Occurring, as it does, in the majority of cases during the active period of a woman's life, when a normally placed uterus is more than essential to her well-being, both mentally and physically, an operation should be accepted which will assure a permanent cure, and, in case she should become pregnant, allow her to look forward to an easy confinement.

Case I.—Mrs. F., aged thirty-one years; multipara; her last child was born ten years ago. The backache, dragging pain, and vesical irritability of which she complained followed this birth; and, from the patient's history, subinvolution, without demonstrating any symptoms of infection, was the cause of her condition.

Examination on March 5, 1895, revealed a partially adherent uterus; body thickened antero-posteriorly; cavity measured three inches and a half; left appendage prolapsed to the side of body; tube thickened and slightly tender; cervix negative; vagina relaxed; and perinæum lacerated two degrees.

Patient was treated locally with ichthyol tampons from March 5 to April 12, 1895, upon which day I made a curettage, and fixed the uterus forward to the abdominal wall, using buried sutures of silk, including the fascia, a slight amount of uterine tissue, and peritonæum. The sutures were passed from before backward through the anterior surface of the uterine cornu. The abdominal wound was closed with interrupted silkworm-gut sutures, the fascia with continuous catgut. The wound was dressed and the patient put to bed in an excellent condition. Her convalescence was perfectly normal. The abdominal sutures were removed on the seventh day, and the patient left the hospital on the twenty-first day, entirely free from backache and vesical tenesmus.

For about two weeks after the patient left the hospital she felt some dragging upon the abdominal wall, and for four weeks, when in the upright position, some vesical irritability; this, however, was not constant, going two or three days at a time without any bladder disturbance. From this time up to June 8, 1896, when she became pregnant (fourteen months after operation), she felt very well and was entirely free from backache and dragging pains, except occasionally at the menstrual periods, when she felt a little soreness at the site of the buried sutures.

At the third month of pregnancy there was a slight tendency to abort—cramp pains and a show of blood on two successive days. Rest in bed, with a grain of morphine in divided doses, arrested this process.

The bladder at this period gave her a little annoyance during the daytime, but not to any degree of discomfort until she entered the last month; then it grew progressively worse as time went on until the last week, when there was almost a constant desire to urinate both night and day, but no dysuria.

During the last two months there were considerable dragging and soreness at the site of the sutures.

Labor started at 5 p. m.; pains irregular, and so continued until 9 p. m., when they assumed a more normal character, completing the first stage at 11.30. The child was born at 12.30, weighing six pounds and three quarters; placenta, with membranes entire, ten minutes later—the three stages taking seven hours and a half. The patient was in labor with her first child fourteen hours; second, ten hours; being six hours and a half and two hours and a half less, respectively. Examination of the uterus showed the body firmly contracted, hugging the abdominal wall. By the vagina, the anterior wall seemed thick and boggy, but not to the degree of thickness as mentioned by writers, or bulging into the lower strait, like a fibroid tumor, either before or after delivery.

Post-puerperal normal; lochia ceased on the thirteenth day; patient up on the fourteenth day, with a well-involuted uterus in the anterior position. Its movement backward and downward was restricted by two short bands, which could be fairly made out.

Case II.—Mrs. R., aged thirty-two years; multipara; last child eight years ago; complained of constant bearing-down pain, rectal tenesmus, dyspareunia, and pains in both parametria, more or less severe since birth of child.

She had worn any number of pessaries, and had been treated by different physicians without entire relief of symptoms.

Examination, May 1, 1895.—I found the vagina relaxed; cervix incomplete; bilateral laceration; body retroflexed and retroverted; both appendages prolapsed, tender, but not adherent.

May 15, 1895.—The patient was curetted and a large quantity of fungoid growths removed. Cavity irrigated with sterilized water, and the endometrium cauterized with iodized phenol; the uterus was then made fast as in the first case, and the abdominal wound closed with silkworm gut. Her convalescence was perfectly normal. She was out of bed on the sixteenth day, and left the hospital on the twenty-first day. Bladder tenesmus annoyed this patient for two weeks. Some dragging pain upon the abdominal wall and backache continued for two months while walking. After this she felt entirely well, and so continued until she was three months and a half pregnant (pregnancy occurred in June, 1896, thirteen months after operation). Her bladder annoyed her considerably, which was corrected by cannabis indica, a quarter of a grain three times a day. Excepting dragging pains off and on at the site of the buried sutures the patient passed through a normal period of gestation, without any tendency to abort.

Labor began at 3 a. m.; pains slow and irregular; first stage, seven hours and a half; second, an hour and a half; and the third stage, five minutes. Child born in L. O. A. position at 12 a. m., weighing seven pounds. Taking nine hours, this was seven hours less than her first labor. The child was larger, according to the mother's statement.

The uterus contracted down firmly and could easily be felt in contact with the abdominal wall. Vaginal examination did not reveal the bogginess of the anterior wall as in the first case. Post-puerperal period normal; lochia ceased on the tenth day; patient up in fourteen days, feeling very good; uterus well involuted and forward, the fundus seemingly an inch and a half below the abdominal wall.

In August, 1896, Dr. Noble, of Philadelphia, collected and reported eight hundred and eight cases of suspensio uteri from American operators, in some of which one ovary was exsected. Of this number, fifty-six became pregnant, forty-three were delivered at term or shortly before, six aborted, seven were undelivered at time of report, and four died. One of the latter, who was septic before delivery, died after Porro's operation made by Dr. Noble where the hypertrophied anterior uterine wall interfered with pelvic delivery; two died from cardiac disease before term, and three from septicæmia produced by retained dead fœtus at seven months, both of which were among Dr. Edebohls's cases.

The fourth was a similar case of Dr. Coe's. The patient became septic from retained dead fœtus of long standing.

Referring to the fatal cases, the operation proved to have nothing to do with the deaths of three.

Regarding the six cases of abortion, two occurred in the same woman; the third, immediately after dancing; the fourth was criminally produced, leaving two without positive cause. Two cases have been reported in which there was a slight disposition to abort, as in my first case, but they were successfully carried over by rest in bed. Even these cases fail to prove that ventrofixation produces a tendency to abort, for they are common enough in patients who have never had the uterus fixed.

Among the forty-three cases delivered at term there were three in which forceps was used—the first low, child weighed eleven pounds; the second difficult, child weighed eight pounds; and the third for uterine inertia, in case of twins, leaving forty normal cases.

Any one of the three above-cited cases, together with cases of transverse and footling presentations, mentioned in the foreign literature, more especially when pelvic deformities are not uncommon, causing dystocia, are seen in the everyday practice of the obstetrician.

Because these complications have occurred following ventrofixation, is there any good and plausible reason why their ætiology should be charged to this operation? I believe that faulty technique may account for cases of reported dystocia where above and below the pelvic brim a bunch of uterine tissue, simulating a fibroid, has been felt, which impeded the descending head. In these cases the fundus and posterior surface of the uterus were fixed, making a forced anteflexion, and giving the posterior wall of the uterus almost the entire work to accommodate the growing fœtus. It is my belief that the sutures should either be placed from before backward through the anterior surface of the uterine horn or transversely through the anterior surface of the body near the fundus, but not including it.

This will allow the fundus to take part in the physiological hypertrophy.

The possibility of a rupture in the posterior uterine wall should be thought of; but, on the other hand, I mentioned a case of twins extracted with forceps, owing to uterine inertia at term, which proves that if the uterine tissue is in a healthy condition it will take care of its physiological contents.

It would appear that the only legitimate deductions to be drawn from these statistics are:

1. That women subjected to this operation are less apt to become pregnant (only fifty-six out of eight hundred and eight cases reported by Dr. Noble). (I have had two out of seven, and of the five others two are still unmarried.)

2. That pregnancy and labor are uncomplicated as a rule.

3. That serious or insuperable obstruction to labor may be produced if the fundus and anterior wall of the uterus are imprisoned below the point of attachment between the uterus and abdominal wall.

4. That it does not cause abortion, and, last, patients are perfectly well after confinement, with a uterus in its normal position.

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THÉ ABUSE OF MEDICAL CHARITIES.*

By JOHN B. HUBER, A. M., M. D.

In the preparation of this paper I have been actuated by a hope that its reading would be followed by a discussion among the members of this society. Indeed, we are all familiar enough with the theme, and certainly there is no one among us for whom it has not some interest. We have ventilated it among ourselves. Each one of us knows of many instances in his own experience of flagrant abuse of the opportunities provided by the hospitals and the dispensaries, and as the matter is largely one where most medical men's pockets are unfavorably affected, the subject is vital.

One approaches it with diffidence, for he who does so logically is likely to vex sundry among his medical acquaintances. For not all medical men suffer from this abuse. Those of independent fortune, who have not gone into medicine with the object of making the work a means of livelihood, are not personally affected, and most of these, according to their temperaments, are either hostile to any attempt at reform, or indifferent. Others find in the dispensaries where only patients too poor to pay a physician are supposed to be treated, considerable opportunity for adding to their private practice and of thus increasing their professional incomes. Others, rightly enough gaining in the dispensaries the means of perfecting themselves in their specialties, are nevertheless careless whether those whom they treat thus are worthy. Others find in the dispensaries and hospitals the means of increasing their personal reputations—frankly, of advertising themselves.

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* Read before the Society of the Alumni of the City (Charity) Hospital, May 12, 1897.

That it is a great abuse all fair-minded men, I am sure, admit. The medical papers have taken up the subject and have proved, what every medical man of any experience in the matter knows, that very great injustice is done to the large majority of medical men in this city. I shall make one quotation. Dr. Landon Carter Gray, in his address on taking the president's chair of the New York County Medical Society spoke as follows (I quote from the *Medical News* of December 5, 1896):

"The county of New York has at the present time 26 hospitals and 114 dispensaries. In the former, during 1895, 75,368 patients were treated free, and in the latter 661,803, making a total of 737,171. The population of this city is only 1,851,060, so that the proportion of such free patients to the whole community is thirty-nine per cent. There have been 92,529 free visits of patients to hospitals in 1895, and 1,387,170 free visits of patients to dispensaries.

"In attendance upon these 114 dispensaries are 949 medical men, which is twenty-seven per cent. of all the physicians in the city, who number 3,430. The foregoing summary does not include institutions under the charge of the local commissioners of charity, of which institutions there are 8, containing 7,089 patients, and that the out-patient branch has treated during one year 49,620. Although it is probable that these cases are really worthy of charity, yet, in strict logic, the figures should be added to those given above, which would swell the total of patients treated in this city in one year to 793,880."

Other writers find that these figures err in being too conservative.

There are those who say that as the human body tends naturally more toward health than toward disease, so in things metaphysical there is generally a tendency toward a solution of difficulties on the side of right. Such thinkers advise us to do nothing. Medical men, they say, will get tired of working in dispensaries without pay; those who give money will cease to do so when they find that their contributions are misapplied, and by and by the well-to-do who accept medical charity will become ashamed of themselves and will stay away, leaving only the really poor to be provided for.

They go on the principle that somehow or other things are sure to come out right. This seems to have been the policy for a number of years past, and certainly we can not say that it has borne much fruit. "Truth is mighty and will prevail," goes the saying; and so it will, no doubt, but not unless it be fought for.

Then there are some very nice people indeed who think it undignified to object to this abuse of medical charity. Well, if it be undignified to seek by honorable means to provide bread and butter for oneself and for those dependent upon one, then truly they are right.

Then there are those who tell us the picture is overdrawn. Perhaps, they admit, here and there an unworthy person receives treatment, but such cases are rare, and inevitable under the circumstances. Let any such, then, spend an afternoon in the Vanderbilt Clinic, for instance, and let him exercise the powers of observation which are generally accredited to any man outside an insane asylum. True, he will find there the really poor, worthy objects of charity; but he will find there also, in at least equal numbers, quite another sort of patient. He will find the actor, the opera-singer, the gambler, and the bartender; and hobnobbing amicably with these he will find the policeman. He will find the clerk and the young man who earns a respectable salary. He will find the farmer from out of town, the man who owns houses, and the prosperous business man. He may find there the broker, the lawyer, the journalist, the bicycle girl, the man who wants to know if his disease will interfere with horseback-riding, and the lady who has left her barouche around the corner; and he may even run across a stray railway president. Besides these he will find there those who, at considerable preliminary expense, exhibit upon their faces the penalties which Venus inflicts upon her too ardent devotees; and he may find there also the *demi-mondaine* with the rich backer, who, it is rational to infer, receives as much money in a night as many a medical man in this city can earn in a month in the practice of his profession.

This does not by any means exhaust the list.

Then we are told the trouble is that the profession is overcrowded. Surely this position is not tenable. Men who feel they are fit and worthy and have the courage of their convictions, can not be nor should they be deterred from entering the ranks. They obey a natural law, which is indeed a wholesome law, for it provides the needy with the best possible service. The fittest should survive, and the unfit must succumb in the struggle. But the point is that the present dispensary system places upon medical men in this city, in their life battle, an unnatural handicap, the like of which, practically speaking, does not exist in any other field of labor—that is, a vast expenditure by the profession of mental and physical force for which there is absolutely no *quid pro quo*. It is on this account that many medical men of brains, character, and solid attainments have shaken the dust of this city from their feet, leaving the practice here, as one of them has said with much, though not of course with entire, truth, to the hospitals and the dispensaries, the men of independent means, and the quacks.

There are others who say there is no use in attacking the dispensary system because it is a gigantic organized trust. Well, if this is true, and if this gigantic organized trust is founded upon falsehood, upon a violation of the sound moral principle that nothing should be given for which an equivalent is not received, upon injustice to the great majority of the doctors in the community, and upon a disregard of the code of ethics which is supposed to bind medical men in their professional relations, surely it should be attacked, just as any kindred evil should be attacked. And it seems to me to be proved by examples in other fields, that if the present dispensary system be dealt with vigorously, consistently, and by unceasing, tireless, day-by-day and week-by-week agitation, its objectionable features will be made to disappear.

What are the legitimate purposes of the dispensary and the hospital? I take them to be two, and I know of no others. First, to provide medical treatment for the sick poor who absolutely can not get adequate treatment at their own expense; second, to provide the student and the man of science with opportunities for the study of disease. With regard to the first: The medical man has from time immemorial been prompted by his own humane instincts, by his oath, and by the traditions of his profession to act the part of the good Samaritan. Of this character there are many workers in the hospitals and the dispensaries; and it is a pity that those who are really disinterested and anxious to be helpful should be befooled to the wholesale extent prevalent nowadays.

With regard to the second: When a patient has the misfortune to suffer from a disease which is rare, or the study of which is likely to help make the physician's experience valuable or to add to the profession's stock of knowledge, and if such a patient will lend himself to experiment and demonstration, in return for which he will receive the physician's best endeavor for the cure of his disease, then there is a transaction which dignifies and honors alike the physician and the patient. Here something is received, for which something is given in return. But when a physician helps to treat hundreds of thousands of the unworthy, whose maladies have for him or his colleagues no scientific value whatever, and the only justification for treating whom is that they swell the lists of patients treated by his own or by rival concerns, then he humiliates himself, and, what is more to our purpose, he is party to a fraud upon his fellow-practitioners, not to speak of the taxpayer and the private donor of funds.

The logical solution of the problem, then, would seem to lie in an organized appeal to the fraternal instincts of the men who work in the charitable institutions, or the alleged charitable institutions, of this city. Some such plan is outlined in an excellent paper by Dr. W. B. Brouner in the *Medical Record* of March 6, 1897. If all these men would combine in a request to the authorities of their respective institutions to investigate the claims of those coming for treatment, in the same way as the Charity Organization Society investigates the claims of its applicants, and would refuse to serve unless this were done, then only the really deserving would receive medical treatment free.

This solution of the difficulty seems as simple as the accomplishment of the fairy's wish, at the mere expression of which the dictates of common sense, common honesty, and the golden rule were implicitly obeyed. However, in fairyland they did not have to deal with human nature, which is quite the same thing among medical men as it is in any other part of the human family.

The length of this paper prevents more than a brief reference to what is, broadly speaking, perhaps the most important point of all. While we are treating the bodies of these patients we are debauching their minds. The present dispensary system makes numberless paupers. We can easily trace the steps. First, there is the acted lie in visiting the dispensary under false pretenses; then comes the habit of getting things without effort; then contempt of effort as being unnecessary to procure what is desired, and then the lapse into idleness and shiftlessness; then follow, according to natural laws, poverty, consequent misery, discontent, hatred of class, and anarchy. In this connection let those among us who are citizens recall the last presidential campaign and other national events in recent years. Perhaps, I rather regret to say, the State legislature, by considering this aspect of the question, may take the solution of the problem out of our hands. I fear that, to the disgrace of the profession, an effectual remedy does not lie in any other direction.

In conclusion, I do not think it *mal apropos* to quote from that system of morality which is considered by Christian and unbeliever alike to be the best guide for the conduct of human affairs which exists in the world. That class of men who are theoretically even more self-abnegating than we, were told to go forth and preach the gospel. Wherever they did this they were to demand meat and drink. If in any place they did not receive these they were to curse that place. "For," said the Master, "the laborer is worthy of his hire."

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THE
PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from page 185.*)

Case XXIII. *Large Uterine Fibroid in a Nullipara.*—(Mackenrodt.) The patient was placed in Trendelenburg's position. The abdominal incision was only six inches long. The tumor was grasped with several bullock forceps and raised out of the pelvis with some difficulty. Catgut and a sharp needle were again used. Beginning above, with the tube on the left side, five or six ligatures were applied on each side, the needle always being reversed and passed through the tissues again before tying the ligatures. Here, as in his vaginal operations, Mackenrodt always makes three knots to his ligatures. After cutting away the uterus there was a large denuded area between the vagina and the bladder. This was covered by sewing the anterior flap of peritonæum on to the bladder. Then an assistant passed a pair of dressing forceps through the vagina into the peritoneal cavity and grasped the catgut ligatures, thereby pulling the uterine stumps well down into the vagina. Then the posterior flap of peritonæum was united with the peritonæum covering the lower part of the bladder, thus shutting off the vagina from the peritoneal cavity. Mackenrodt has practised this method since 1890, and is well satisfied with it.

Case XXIV. *Cystocele and Proctocele complicating a Five Months' Gestation.*—(Mackenrodt.) The woman is poor and can not afford to be confined to her bed continually, as would be necessary owing to the discomfort she is suffering. Treatment with pessaries was of no avail. Accordingly, anterior and posterior colporrhaphy were determined upon. Diamond-shaped denudations were made quickly and closed with continuous catgut sutures. Care had to be exercised not to cut deeper than the mucous membrane, as there was great congestion (venous) of all the tissues, due to the gestation. The cervix was not grasped with volsella, and the operation was done in as short a time as possible. Mackenrodt has done plastic operations on pregnant women four or five times and has never seen an abortion follow.

Case XXV. *Lupus of the Vagina.*—(Mackenrodt.) Mackenrodt had removed the diseased tissue with the Paquelin, destroying most of the mucous membrane of the vagina. From another patient, on whom he had to do a colporrhaphy, he obtained mucous membrane which he transplanted into the vagina of the first patient. He kept it in place with a gauze tampon. It healed beautifully, and looked almost like normal mucous membrane. The rugæ could be seen distinctly, but they were shallower than in the normal. A small vesico-vaginal fistula had been left over, which Mackenrodt closed by first dissecting off the mucous membrane of the bladder, which he united with fine catgut sutures, and then made flaps of the transplanted mucous membrane and brought them together over the united mucous membrane of the bladder, using silkworm gut for this purpose. He always uses silkworm gut in fistulæ and says he has never yet failed to close one. He insists that considerable of the mucous membrane of the bladder must first be freed.

Case XXVI. *Retroversion of the Uterus combined with Cystic Degeneration of the Right Ovary.*—(Winter.) A cœliotomy was done in the median line, the patient being in Trendelenburg's position. The right tube and ovary were tied off with several catgut ligatures and removed. The uterus was then attached to the abdominal wall in the following way: A needle, armed with silkworm gut, was passed from the peritoneal cavity on the right side at the level of the cornu of the uterus, through the peritonæum and muscle, out again through the peritonæum, then through the right cornu of the uterus. Thereby the right side of the uterus was anchored to the abdominal wall. Then, on the left side, a similar suture was passed through the junction of the round ligament and uterus, and through the peritonæum and muscle. These two ligatures were cut short, and the uterus was attached thereby to the anterior abdominal wall.

Case XXVII. *Fixed Retroversion of the Uterus; Cystocele.*—(A. Martin, Berlin.) An oval denudation was made on the anterior vaginal wall; the bladder was pushed well up out of the way. The peritonæum was opened between the bladder and the uterus. Two fingers inserted into the peritoneal cavity broke down the adhesions binding down the uterus. The latter was then pulled forward with claw forceps. The tubes and ovaries were drawn forward, partly with the fingers, partly with clamps. They were found to be normal, and were returned into the peritoneal cavity. Now three catgut sutures were passed through the edge of the denudation on the anterior vaginal wall, then through the anterior wall of the uterus, and through the edge of the denudation on the opposite side. The uppermost of these three sutures was about three centimetres below the fundus of the uterus. Then one suture was passed in a similar way through the cervix, attaching it also to the anterior vaginal wall. One running catgut suture closed the rest of the denuded area and completed the operation.

Case XXVIII. *Partial Prolapse of the Uterus; Hypertrophy of the Cervix; Cystocele and Rectocele.*—(Martin.) The posterior lip of the cervix was first amputated. Then an oval denudation was made on the anterior vaginal wall, the bladder was pushed up out of the way, and the peritonæum opened. The annexa were then inspected and found to be normal. The uterus was fastened to the anterior vaginal wall in the way described above, a catgut suture likewise attaching the cervix to the vaginal wall. Martin lays stress on this one suture, which, he believes, materially aids in keeping the uterus in place. A running catgut suture closed the opening in the peritonæum. The anterior lip of the cervix was then amputated. Martin then did a colpoperineorrhaphy according to his own method. A triangular denudation is mapped out on both sides of the median line low down in the vagina. Each denuded area is closed by a running catgut suture. Then an area of the shape of a parallelogram is mapped out, the lowest angle being in the median line toward the anus, the upper angle also in the median line toward the cervix, and the two lateral angles toward the suture on each side of the vagina that brought together the lateral denuded area. This quadrilateral area is then brought together by a running catgut suture, and the operation is completed. During all plastic operations an assistant holds a nozzle connected with an irrigating bag and allows a fine stream of sterilized water to play over the operating field, keeping it clear of blood.

Case XXIX. *Double Pyosalpinx.*—(Mackenrodt.) The patient, who was thirty-five years old, had for a long time received palliative treatment without any result. The examination under chloroform showed both tubes enlarged, and the tubes and ovaries tightly bound down to the pelvis. An incision was made into the posterior vaginal wall and the *cul-de-sac* was opened. The left tube and ovary were first freed, and with clamps were pulled down into the vagina. The ovary looked normal, but the tube was as thick as a thumb and evidently contained pus. A large clamp was applied to the tube close to the uterus and it was cut away. The ovary was not removed. Two catgut ligatures tied off the stump of the tube, and the clamp was removed. With considerable difficulty the right tube and ovary were then freed and carefully pulled down with clamps. When the tube was already in the vagina, one of the clamps tore through its wall, and a little pus escaped into the vagina. It was irrigated away with sterilized water. The ovary on this side was also very much diseased, and accordingly it was clamped off together with the tube, and both tube and ovary were cut away. The pedicle was then also tied off with two catgut ligatures and the clamp released. Mackenrodt then closed the incision in the vagina with several catgut sutures that passed through the wall of the vagina and the peritonæum. He says he gets quicker cures by closing off the peritoneal cavity in this way, and he does not feel the necessity of draining even in such a case as this.

Case XXX. *Bilateral Uretero-vaginal Fistula.*—(Mackenrodt.) Four weeks before, for an extensive epithelioma of the cervix, the uterus was removed with the Paquelin, one ligature only being applied to each ovarian artery, otherwise all vessels were divided with the cautery. Four days after the hysterectomy had been performed in this way urine came from the vagina. On examination, a fistula was found on each side of the posterior vaginal wall. On passing bougies, it was found that each fistula communicated with a ureter. In all probability the epithelioma had grown into the wall of the ureter, and the slough which followed the application of the cautery left the defect in the wall of the ureter. Four weeks after the primary operation the fistulæ were closed in the following way: The right one was first attacked. An incision was made into the bladder, about one centimetre from the fistula, nearer the median line. The mucous membrane of the ureter was freed from the fistula as well as possible. A catheter was introduced into the ureter about eight centimetres. A sound was then introduced through the urethra into the bladder and out through the opening that had just been made into the vagina. The end of the catheter that had been introduced into the ureter was tied over the end of the sound, and the sound was withdrawn, pulling the ureter catheter through the newly made opening into the bladder and out through the urethra. The mucous membrane of the ureter was then sewed to the mucous membrane of the bladder at the artificial opening. These sutures were cut short. Two layers of sutures were applied over these buried sutures, and in this way the ureter was implanted into the bladder and the artificial opening closed. The same procedure was resorted to on the opposite side, and both ureter catheters were left hanging out of the urethra. On the third day after the operation the patient pulled one of the catheters out, and as the other one was not draining well it was also removed.

Case XXXI. *Chronic Endometritis, with beginning Adenomatous Degeneration.*—(Martin.) The woman, who was thirty-five years old, had been three times curetted without benefit. Sections made of the uterine scrapings showed a chronic endometritis, with adenomatous degeneration in places. Martin considered the case on the border line between benign and malignant disease, but, as the patient was anxious to have the uterus removed, he decided to do a vaginal hysterectomy. The posterior vaginal wall was first incised and the *cul-de-sac* opened. Catgut ligatures were then applied with an ordinary sharp curved needle, beginning low down on the left side. The needle is passed, reversed, and passed back again through the same tissues, emerging near the first point of entry. Martin does this with all his ligatures to prevent their slipping. The tissues tied off are cut away from the uterus, and then two other ligatures are applied in a similar way higher up. Then, in the same way, three ligatures are applied on the right side. The cervix has in the mean time been freed all around with a scalpel and the bladder pushed upward. With claw forceps the uterus is now drawn out through the posterior vaginal incision, after the peritonæum has been opened anteriorly. With three ligatures on each side the broad ligaments, with the tubes and ovarian arteries, were tied off, and the uterus was cut away. As soon as the peritonæum had been opened posteriorly it was sewed to the posterior vaginal wall, and the anterior flap of peritonæum was sewed to the anterior vaginal wall. After the uterus was removed, the two uterine stumps were sewed to the vaginal wall, and a few ligatures closed the vagina and peritonæum.

Case XXXII. *Large Submucous Uterine Fibroid, with Short, Thick Pedicle, partly Gangrenous.*—(Mackenrodt.) The tumor was too large to be brought out through the cervix, although the latter was large enough to admit three fingers. The tumor was steadied with claw forceps, and several large pieces were excised from it. Then it could with difficulty be pulled through the cervix. The pedicle was grasped with two clamps and burned off with the Paquelin to prevent infection from the gangrenous stump. In doing this, although it was slowly and carefully done, a hole in the uterus nevertheless resulted. As there were also several fibroid nodules to be felt in the wall of the uterus, a vaginal hysterectomy was then performed. The uterus, after its removal, was about four times the normal size, and contained several small fibroid tumors.

Case XXXIII. *Large Subperitoneal Fibroid.*—(Ohlshausen.) The patient being in Trendelenburg's position, cœliotomy was done in the median line. The torn adhesions bled freely, as did the tumor itself, which was very vascular. The tubes and ovaries were first tied off. Owing to the hæmorrhage from the tumor, Ohlshausen passed a rubber tube tightly around the cervix, and then tied off the uterine artery on both sides. He then made large flaps of peritonæum, especially the anterior one. The uterus, with the tumor, was then cut away above the rubber tube. The rubber tube was then removed, and the few vessels in the stump that were bleeding were caught separately and ligated. The uterine cavity, as soon as it had been exposed, was carefully cauterized with the Paquelin. The two flaps of peritonæum were then united over the stump, and, as the anterior one was the longer, the line of suture was well posterior. Lateral rents in the broad ligaments were sewed, thereby covering the ovarian stumps with peritonæum.

Case XXXIV. *Multiple Small Fibroids, with Double Salpingo-oophoritis.*—(Schauta, Vienna.) The cervix was freed all around; the posterior *cul-de-sac* was first opened, then the anterior one. The posterior flap of peritonæum was sewed to the posterior vaginal wall, the anterior flap to the anterior wall. Three medium silk ligatures, applied on each side, secured the uterine artery and its branches. Then the cervix was severed from the uterus by a cross section. The uterus was now grasped with claw forceps and brought into the vagina posteriorly. The tubes and ovaries were freed from their adhesions and tied off with two medium silk ligatures on each side. The uterus with the annexa was then cut away. A few vaginal arteries that were spurting were secured. A long strip of iodoform gauze was then introduced well up into the pelvic cavity, where the tubes and ovaries had been adherent.

Case XXXV. *Large Subperitoneal Fibroids.*—(Chrobak, Vienna.) Cœliotomy was done in the median line, with the patient in Trendelenburg's position. The tubes and ovaries were tied off with silk. The tumor was continuous with the uterus by a broad pedicle. The adhesions were severed and a ligature was passed around the uterine artery on each side. Both flaps of peritonæum were made large. A rubber tube was passed around the cervix, and the upper part of the uterus, with the tumor, was cut away. The uterine cavity, as soon as it was exposed, was carefully cauterized with the Paquelin to prevent infection of the peritoneal cavity. A grooved director, similar to the one used in Prague, but with a curved handle, was now introduced by an assistant into the vagina posterior to the cervix. On this as a guide the operator opened the vagina posteriorly. He then passed ligatures, successively tying off all the branches of the uterine artery on both sides. Silk alone was employed, and all ligatures were cut short. After tying each ligature, the tissues tied off were severed from the uterus, until the whole uterus was freed. The anterior and posterior flaps of peritonæum were united with a few sutures, thus shutting off the vagina from the peritoneal cavity. The abdomen was then closed without drainage.

Case XXXVI. *Multiple Large Subperitoneal Fibroids.*—(Chrobak.) Cœliotomy in the median line. One tumor, as large as an adult head, had a narrow pedicle, which was surrounded by a rubber tube and the tumor was cut away. The tubes and ovaries were freed and tied off. The anterior and posterior flaps of peritonæum were again made large, and a ligature passed around the uterine artery on each side. The uterus was then cut away above the cervix, and the few vessels that bled in the stump were caught and ligated. The uterine cavity was cauterized with the Paquelin. Eight or ten cotton threads were then tied to the end of a sound, which was passed from the abdomen through the uterine cavity into the vagina. The threads were then cut loose from the sound and acted as a drain for the uterine cavity. The two flaps of peritonæum were then sewed over the stump and the abdomen was closed.

Case XXXVII. *Three Months' Gestation complicated by Subperitoneal and Intramural Fibroids, with Cystic Degeneration of Both Ovaries.*—(Schauta.) Cœliotomy showed one tumor of the size of two fists with a narrow pedicle. This was tied off with two silk ligatures and the tumor was cut away. Another smaller subperitoneal fibroid was likewise tied off and cut away. In both cases flaps were made of the peritonæum covering the tumors, and after the tumors had been removed the peritoneal flaps were sewed over the stumps with fine silk. The tubes and ovaries were left alone.

Case XXXVIII. *Chronic Salpingo-oophoritis on the Right Side.*—(Schauta.) A cross incision is made through the anterior vaginal wall; the peritonæum is opened between the uterus and the bladder. With several fine silk ligatures the peritonæum is sewed to the vaginal mucous membrane. With claw hooks the uterus is pulled forward. After the adhesions are broken down with the finger the tube and ovary are tied off with two silk ligatures and cut away. A slight laceration of the uterus from one of the claw hooks is closed with a fine silk suture. The uterus, which is retroverted, is fastened to the anterior vaginal wall by one silk suture, and the cross incision in the vaginal wall is sewed up longitudinally.

Case XXXIX. *Large Intramural Fibroid.*—(Chrobak.) It was decided to remove the tumor (which was about the size of two fists) with the uterus through the vagina. The cervix was freed all around with the scalpel, and the posterior *cul-de-sac* was opened. Three heavy silk ligatures were then applied to each side. Then the anterior *cul-de-sac* was opened and the right tube and ovary were tied off. Chrobak now attempted to deliver the tumor and the uterus, but the mass was too large. He then excised a large piece of the anterior uterine wall, going into the uterine cavity, and then excised several pieces of the tumor. With considerable difficulty he was then enabled to bring the tumor out of the pelvis. The left tube and ovary were clamped and the tumor with the uterus cut away. Ligatures were then applied in place of the clamp which was removed. The anterior and posterior flaps of peritonæum were then united with several fine silk ligatures. By this method a large growth was removed through the vagina. There was no hæmorrhage, and the whole operation only lasted half an hour.

Case XL. *Tuberculous Peritonitis.*—(Calderini, Bologna.) The history was meagre and indefinite. The woman had been well until the birth of her last child, sixteen months ago. Since then there has been amenorrhœa, and at times abdominal pain. On examination, the uterus could be readily felt anteriorly; posterior to it was a large, tender, semifluctuating mass that reached above the fundus uteri. There was no history that would point to ectopic gestation. An examination under chloroform substantiated the fact that the uterus was small and anterior. A sound introduced into it showed it to be of normal size, with this large mass posterior and superior to it. The probable diagnosis of ovarian cyst or soft uterine fibroid was made.

Cœliotomy was performed in the median line. The intestines were found tightly adherent to the abdominal wall. On freeing them a small amount of serous fluid ran out of the peritoneal cavity. Douglas's *cul-de-sac* was full of agglutinated coils of intestine, the walls of which were studded with miliary tubercles. The diagnosis, therefore, was tubercular peritonitis, and the abdomen was accordingly closed.

Case XLI. *Complete Prolapse of Uterus.*—(Pestalozza, Florence.) The patient was sixty-five years old. In patients with extensive prolapse where there is no longer a liability to conception, Pestalozza does the following operation. The cervix is pulled down with claw forceps; part of the anterior and posterior vaginal walls come down with it. An oblong denudation is made above the os uteri—*i. e.*, on the anterior vaginal wall—and a similar denudation below the os—*i. e.*, on the posterior vaginal wall. The longer diameters of the denudations are from side to side, and measure about two inches and a half. These two denudations are then united by discontinuous catgut ligatures, the uterus being pushed upward behind the wall which is thus formed and prevents its prolapse. If necessary, a small plastic operation is done on the posterior vaginal wall and perinæum. There is enough room laterally to allow the secretions to run out of the uterus. An advantage is the fact that the operation, being almost painless, can be done without a general or even a local anæsthetic. Pestalozza operated on one woman eighty-five years of age in this way.

Case XLII. *Bilateral Intraligamentous Cysts.*—(Freund, Strassburg.) The patient, who was thirty-five years old, had always been sterile, and had gone through several attacks of pelvic peritonitis. The examination showed several large semifluctuating tumors. An incision was made in the median line. A large intraligamentous cyst was found on the left side very tightly adherent to the uterus and to the large intestine. It could not be lifted out of the abdomen. During the manipulation it ruptured. The adhesions with the gut were so strong that they had to be severed with the scalpel. After freeing the cyst it was tied off, together with the left tube and ovary. On the right side there was a smaller cyst, also very firmly adherent to the uterus, to intestine, and to the appendix. In freeing the adhesions a small abscess in Douglas's *cul-de-sac*, containing foul-smelling pus, was unintentionally opened. After the cyst was entirely freed it was tied off, together with the right tube and ovary. There still remained some of the cyst wall behind the uterus, along the posterior vaginal wall. This was also removed. The stumps of the tubes were, as far as possible, covered with peritonæum. Silk was used as ligature material. Two strips of gauze impregnated with thymol were inserted into the abdomen at the lower angle of the incision.

CASE XLIII. *Chronic Metritis.*—(Jacobs, Brussels.) The patient was forty-five years old; she suffered from severe hæmorrhages, pain, and discomfort. A vaginal hysterectomy was determined upon. The cervix is grasped with several Museux forceps and is freed from the vagina with a curved-pointed Paquelin. Then the anterior *cul-de-sac* is readily opened with scissors, likewise the posterior *cul-de-sac*. One clamp is applied low down on each side and the tissues clamped are severed from the uterus with long curved scissors. Then, with successively applied Museux forceps, the uterus is slowly brought out anteriorly. The tubes and ovaries are then clamped off on each side and freed from the broad ligament. The tissues remaining between these clamps and those first applied from below are now clamped off and divided, and the uterus with the tubes and ovaries is free. Now a silk ligature is substituted for the clamp containing the right ovarian artery, and the same thing is done on the left side, the clamp being slowly removed while the first knot of the ligature is being tied. Then successively each clamp is released and a strong silk ligature applied in place of each one. Two silk sutures then close the vagina; they pass through the whole wall of the vagina, including both flaps of peritonæum. Jacobs has three principal reasons for having replaced the clamps by ligatures—first, patients are more comfortable after the operation than if the clamps remain in place; secondly, it is not possible to absolutely prevent infection from traveling along the clamps into the peritoneal cavity; thirdly, adhesions may form around the clamps and the gauze, the intestines may become adherent, and an ileus may occur. Jacobs has seen this result.

CASE XLIV. *Left-sided Pyosalpinx with Ovarian Cyst.*—(Jacobs.) The diagnosis that had been made before the operation was pyosalpinx lying anteriorly. The anterior *cul-de-sac* was opened as in the first step of a hysterectomy. A cyst was found on the left side besides the pyosalpinx, but so tightly adherent that Jacobs was afraid of injuring the gut if he attempted to remove it from below. Accordingly the woman was placed in Trendelenburg's position and the abdomen was opened. What looked like a tuberculous tube and ovary were found, with an abscess of considerable size, and a cyst. The adhesions were very strong, and many of them had to be cut. The abscess ruptured during the manipulation. The tube, ovary, and cyst were tied off and removed. The abscess, which was in the broad ligament, was drained with sterile gauze led out through the abdominal wound. If there is no rise of temperature, the tampon is removed after three days, and the opening closed with secondary sutures.

CASE XLV. *Parametritis, with Possible Pyosalpinx.*—(Jacobs.) That was the diagnosis Jacobs made. With the Paquelin the cervix was freed posteriorly, and then the peritonæum was opened with scissors. A large exudation was found between rectum and uterus, and a few drops of pus flowed out. The adhesions, which were chiefly severed with the cautery, bled very freely. Hot sterilized water was poured into the peritoneal cavity through the vagina and succeeded in arresting the hæmorrhage. Both tubes and ovaries were found diseased and adherent to the pelvis, so Jacobs decided to remove the uterus with the annexa. With the cautery the cervix was freed anteriorly, and the anterior *cul-de-sac* opened with scissors. Then three clamps were applied to the right side of the uterus, which was freed with scissors. The left side of the uterus was then similarly clamped off and freed. The adhesions between the uterus and the exudate again bled freely on being torn, and hot water was again poured in to control the hæmorrhage. Then, with considerable difficulty, the left tube and ovary, the former evidently containing pus, were shelled out, clamped off, and cut away. The annexa on the right side caused even more difficulty, being very tightly bound down by adhesions. They were finally freed, and likewise clamped off and removed. The hæmorrhage from all the torn adhesions was so great that one assistant compressed the abdominal aorta for a few minutes while the pelvis was packed with cotton. Then the hæmorrhage ceased and Jacobs proceeded to release the clamps, tying off the tissues they contained with strong braided silk. After all the clamps were removed one suture was applied at the middle of the vagina, uniting the anterior and posterior flaps of peritonæum, as well as the anterior and posterior walls of the vagina. The uterine stumps with their ligatures were allowed to protrude into the vagina on each side for drainage. The case ended in recovery.

CASE XLVI. *Double Pyosalpinx, Combined Method.*—(Jacobs.) Cœliotomy showed two of the largest pus sacs I have ever seen. The one on the right side was almost as large as a child's head at full term and the one on the left side about half as large. Jacobs had mistaken them for large fibroid tumors. Both were tied off with silk and removed without rupturing them. Then the abdomen was closed. The woman was now placed in the lithotomy position, the vagina was disinfected, and with the Paquelin the cervix was freed all around. The anterior and posterior *culs-de-sac* were opened, the uterus was clamped off in the usual way and removed. Silk ligatures were applied in place of the clamps and the middle portion of the vaginal flaps united by two silk sutures, the stumps with their ligatures protruding into the vagina. A gauze tampon was now introduced into the upper part of the vagina, and the ligatures from the two stumps were tied together over this tampon, retaining it in place.

CASE XLVII. *Fibro-myoma in Anterior Wall of Uterus.*—(Jacobs.) Jacobs decided to do the operation of morcellement. The cervix was freed as usual and the peritonæum opened anteriorly and posteriorly. One clamp was applied from below on each side and the tissues clamped were divided. Then with scissors the anterior wall of the uterus was slit open up to the fibroid. This was incised, and with claw forceps Jacobs tried to bring the uterus with the tumor into the vagina, but the mass was too large. The tumor was incised several times and some pieces were excised. After considerable effort, by successively applying strong Museux forceps, he finally succeeded in bringing the fundus out into the vagina anteriorly. Then clamps were applied as usual and the uterus with its tumor was cut away. The operation took considerable time, but compared with a cœliotomy the shock to the system is probably less. The result was a favorable one. Where it would take more than an hour and a half to remove a tumor through the vagina Jacobs does a cœliotomy.

CASE XLVIII. *Double Pyosalpinx.*—(Jacobs.) After the cervix had been freed, as usual, Jacobs tried to open the peritonæum anteriorly, but it was too high up for him to reach. He accordingly applied a clamp low down on each side of the uterus, cut the tissues clamped off, and was then enabled to pull the uterus farther down and readily opened the anterior, and then the posterior *cul-de-sac.* With claw forceps the fundus was pulled forward into the vagina, clamps were applied as usual, and the uterus was removed. Then the left tube and ovary were freed; during this proceeding the tube was torn and some pus escaped. The tube and ovary were then clamped off and removed. Ligatures were then applied in place of all the clamps on the left side. Then, after being freed, the right tube and ovary were clamped off and cut away. Ligatures were now applied in place of the clamps on the right side. With cotton dipped into a 1-to-1,500 solution of formalin the peritonæum was cleansed. Finally the anterior and posterior flaps of the vagina were united with one suture.

Case XLIX. *Secondary Operation.*—(Jacobs.) About a year ago the patient had undergone a cœliotomy at the hands of another surgeon. At that time a cystic ovary on the left side had been removed and a cœliohysterorrhaphy performed. The patient now complains of continual pain on the right side, where the ovary can be felt considerably enlarged. The uterus is not tightly adherent to the abdominal wall, but can be moved several centimetres in all directions. Jacobs proposed to make a small incision in the median line of the abdomen, loosen the adhesions between uterus and abdominal wall, then close the abdomen and do a vaginal hysterectomy. On opening the abdomen a very firm fibrous band, about a centimetre wide and five centimetres long, was seen uniting the uterus to the abdominal wall. This band was so firm that it had to be cut with scissors. One ligature could be felt in this fibrous tissue; the ventrofixation had evidently been done with buried sutures. The abdomen was then closed. Vaginal hysterectomy was now performed as usual. The cystic ovary was tightly adherent and required considerable effort to free it.

It is just in such cases where a long fibrous band is formed between the uterus and the abdominal wall that a coil of gut becomes constricted and intestinal obstruction results. In Jacob's laboratory I saw three similar specimens, two of the patients having died of ileus. One of the ventrofixations Jacobs had done himself. He has now given up the operation entirely.

Case L. *Chronic Metritis.*—(Legueu, Paris.) The patient was suffering from uterine hæmorrhages for a long time. The cervix had been amputated, and the uterus curetted several times, but it was of no avail. Accordingly, vaginal hysterectomy was determined upon. The cervix was freed all around with the scalpel, and both *culs-de-sac* were opened. The anterior wall of the uterus was then slit open with scissors; then the posterior wall was likewise split in the middle line. Now first were clamps applied. One was applied to the left tube and ovary and one to the left side of the uterus, which was then cut away with the tube and ovary. The same thing was then done on the right side. Strips of sterile gauze were inserted well up into the pelvis alongside the clamps, which were left in place. The danger of infection emanating from such a uterine cavity when it is opened in this way seems to be lost sight of; for I frequently saw this step of the operation performed at the hands of different operators in Paris without their applying the cautery to the uterine mucous membrane to render it sterile.

Case LI. *Large Unilateral Pyosalpinx.*—(Hôpital Broca, Legueu.) Cœliotomy in the median line. In breaking down adhesions the pus sac burst and its contents entered the peritoneal cavity. The pus sac was tied off with silk ligatures, together with the ovary, and removed. A Mikulicz gauze drain was introduced and the abdomen closed. If everything is normal, after three days the gauze is removed and the opening is closed.

Case LII. *Multiple Intramural Uterine Fibroids, with Ovarian Abscess.*—(Hôpital St.-Louis, Legueu.) The cervix was freed all around with the scalpel, the bladder and rectum pushed out of the way, and the anterior and posterior layers of peritonæum opened. Then with scissors both the anterior and the posterior walls of the uterus were slit open in their centre. The capsule of each little fibroid tumor was incised; the fibroid itself was then grasped with strong Museux forceps and pulled out of the wall of the uterus; pieces of the uterus were also cut away. Still it was not yet possible to bring the large fundus forward, owing to the huge ovarian abscess on the left side. Accordingly, this was opened bluntly, and a large amount of pus allowed to flow out of the vagina. Then more pieces were cut out of the uterus, until finally it could be drawn out anteriorly. During all this time no clamps or ligatures had been applied and the hæmorrhage was only trifling. Now the uterus was clamped off on both sides and cut away. Its original size was about that of two fists. Strips of gauze were introduced in the usual way and the clamps left in place. The ovaries and tubes were not removed.

Case LIII. *Large freely Movable Uterine Fibroid, extending almost up to the Umbilicus.*—(Hôpital St.-Louis.) The preliminary steps of the operation were the same as in the last case. After the peritonæum had been opened in front of and behind the cervix both the anterior and the posterior uterine walls were incised. Then with a curved knife on a long handle the tumor was incised in two places; two strong Museux forceps grasped the growth between two such incisions and forcibly removed a part of the growth. The tumor was soft and principally intramural. Two large pieces of the tumor, each about the size of a fist, were removed in this way, and many smaller pieces, until the uterus with the remainder of the tumor could be drawn into the vagina anteriorly. Until this time neither clamp nor ligature had been applied. Now a clamp was applied from below on each side, which grasped the uterine artery and its branches, and then a clamp was applied from above on each side which grasped the ovarian artery. Then the uterus with the annexa was cut away. The whole operation lasted only *twenty-five minutes*, and the hæmorrhage was not worth mentioning. The shock from such an operation must be almost *nil.*

Case LIV. *Pyosalpinx on the Right Side and Ovarian Cyst on the Left.*—(Hôpital St.-Louis.) The operation was begun as usual. The anterior and posterior walls of the uterus were completely slit up, dividing the uterus into two lateral halves. The pyosalpinx was not adherent. It was clamped off together with the right half of the uterus, two clamps being applied for this purpose. This half of the uterus, together with the pus tube and ovary, were then cut away. On the opposite side the cyst was found to be adherent to the small intestine. During the manipulation of freeing it the cyst was ruptured and the serosa of the gut was torn a little. The tube and ovary were clamped off from above, the left half of the uterus from below, and the parts were then cut away. A few fine silk sutures repaired the torn serosa. The usual gauze tamponade was made use of, and the clamps left *in situ.*

CASE LV. *Unilateral Ovarian Abscess.*—(Segond, Salpêtrière.) Segond lays down the dogma: "For unilateral tubal or ovarian disease, do a cœliotomy; if bilateral, do a vaginal hysterectomy, followed by double salpingo-oophorectomy, using clamps, never ligatures." In this case, carrying out his theory, he opened the abdomen and found a large ovarian abscess on the left side, the right tube and ovary being normal. In freeing adhesions the abscess ruptured, but no pus got into the peritoneal cavity. The appendages on the diseased side were then tied off with silk. The adhesions bled freely, and Segond accordingly introduced a strip of iodoform gauze, as well as a drainage-tube, through the lower angle of the abdominal wound. He uses silver wire to close the abdomen.

CASE LVI. *Uterine Fibroids?*—(Hôpital Necker.) The diagnosis of uterine fibroids was made, and the treatment was to consist in a vaginal hysterectomy. The cervix was freed with the scalpel, but the peritoneal fold could be reached neither anteriorly nor posteriorly. Accordingly, the anterior wall was split a little and the anterior wall grasped on each side of the incision with a strong Museux forceps and pulled forcibly downward. Then the anterior wall was split further up, again grasped with forceps, and pulled forcibly downward until the anterior fold of peritonæum could be reached and opened. In attempting to open the posterior *cul-de-sac* with the finger a large abscess of the left ovary was inadvertently opened, and on the right side a smaller abscess was similarly opened. There was no fibroid tumor present at all, but it was a case of double ovarian abscess with a large uterus. The fundus of the uterus was tightly adherent to the omentum. This was freed, and then the right tube and ovary were freed and clamped off together with the right half of the uterus and freed with scissors. The left tube and ovary were very tightly adherent to the omentum and the lateral wall of the pelvis. They were finally freed, clamped off together with the left half of the uterus, and likewise removed. The clamps were left in place, five in all, and strips of iodoform gauze were introduced alongside them. Both tubes, as well as the ovaries, were macroscopically very much diseased; and the uterus was evidently the seat of a chronic metritis.

In conclusion, I shall attempt briefly to detail a few of the operations I saw performed in London, not on account of their being interesting or instructive, but for the sake of being complete.

CASE LVII. *Ectopic Gestation.*—(Samaritan Hospital, Mr. Doran.) Cœliotomy was performed with the patient flat on her back. The right tube was found very much distended and fluctuating. It was punctured with a trocar and a considerable amount of dark-colored fluid ran out. Owing to the fact that the patient was not in Trendelenburg's position, the intestines continually came into the field of operation. Doran finally decided that he could not do a radical operation, and accordingly sewed the wall of the tube into the abdominal wall, employing the Mikulicz gauze for drainage. Had the pelvis been elevated, the tube and ovary could readily have been removed.

CASE LVIII. *Small Uterine Fibroid.*—(Guy's Hospital, Dr. Galabin.) The patient was thirty-five years old and had had an attack of "parametritis." Galabin proposed to do a double oophorectomy. As in the previous case, the patient was not put in Trendelenburg's position, and as a result the intestines and omentum continually came in the way of the operator. The incision, which at first had been small, was gradually enlarged until it reached to the umbilicus. There were many adhesions, but the operator never obtained a clear view of the field of operation. After over an hour's work the right tube was tied off and removed. Neither of the ovaries nor the left tube was seen during the operation. No attempt was made to remove either the fibroid or the uterus. A glass drainage-tube was inserted at the lower angle of the abdominal incision.

CASE LIX. *Large Uterine Fibroid.*—(Chelsea Hospital for Women, Mr. Bland Sutton.) The patient was forty-five years old. Five years ago Mr. Sutton had opened the abdomen, removed the left tube and ovary, and tied off the right tube, as he could not find the ovary on that side. Menstruation had continued until eighteen months ago, but the tumor had been growing steadily, and the pain had become unbearable. Cœliotomy, with the patient in Trendelenburg's position, showed a large retro-uterine fibro-myoma adherent to the abdominal wall on the right side and to the omentum behind. The adhesions were partly torn and partly cut; bleeding ones were tied off with fine silk. The uterine arteries were tied with heavy silk and the uterus with the tumor was cut away above the cervix. The peritoneal flaps were then sewed over the cervix with fine silk. The cautery was not applied to the mucous membrane of the cervix. The raw surfaces left were, as far as possible, covered with peritonæum.

(To be continued.)

STEPS TOWARD INSANITY.*

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THE biological doctrine that structure determines function is as applicable to the neurone as to other basal elements, and likewise to its normal as to its abnormal states. Recent studies of the neurone seem to substantiate the view that this doctrine may be scientifically applied to the functional perversion termed insanity, and that it may be assumed that in this affection structural changes are always present. Moreover, it is fast becoming relevant to discuss cytological conditions in connection with the insane constitution, its processes and its destinies.

Although sharply outlined functional differentiations between the ambiguous, pyramidal, and polymorphic layers of the cortex are not yet absolutely made out, still the possibility of this seems somewhat clearer with each succeeding investigation; and it now looks as if the work of Andriezen, of Berckley, of Mills and Dana, and others, with probable modifications not yet even suggested, is to hold, and actually to become the basis of a psychopathology, structural as well as functional.

Fundamentally it may be premised that the multineuronic system can at no point be tapped without in some way intruding upon the integrity of its psychical concomitant. This is not affirming, however, that we yet know how this concomitance is operative either in health or in disease. Physiological psychology must first settle for us whether mind is simply a function of highly organized material elements, or whether these themselves are but an expression of an all-pervasive mind; or, again, whether the kingdoms of mind and matter run side by side in a parallelism which never admits of vital contact or reciprocal influence at any point. Until this is done, psychiatry, basing on the common experience (empiricism, in fact), must continue to assume, what pathological evidence seems always to imply, that mind and matter are dependent upon and modified by each other, in varying direction and degree; and that we are justified in looking for the steps by which not only the reciprocating influence is accomplished, but also for those by which mental pathology is effected through physical influence, and alterations of body are brought about through mental stress.

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* Read before the American Neurological Association at its twenty-third annual meeting.

Interest in the steps by which the structural changes underlying insanity are brought about awakens and intensifies as one comprehends the fact that along with those actually insane, numbering over a hundred and five thousand, must be considered the economic, ethical, and health importance of all the other classes of degenerates—the idiotic, numbering in the nation about one hundred thousand, and the criminal, almost as many more; and likewise all the petty offenders which, together with the rest, make a grand total of over seven hundred thousand; and for the reason that all these denote or imply the fact of malformed, unstable, and malfunctioning structural elements. Add to these again the great number of incapables, inebriates, cranks, exploders, waywards who are never listed, and yet who are on the way to physical destruction, and not alone the interest deepens, but the problem becomes as great as perplexing. Certainly it needs no apology, then, for undertaking once more to so study the problem as to bring out the various steps through which degeneration comes to be, and the primary causes involved therein.

The present paper is an outcome of a study of instances of threatened or confirmed alienation which have come under personal observation, and which, as a rule, have been favorable ones for individual and searching investigation. Sometimes I have been much assisted in this by either the subjects themselves or by intelligent associates or relatives. But undoubtedly there is much yet to be desired in this respect, and frequently I have been unable to satisfactorily eliminate the misleading effects of ignorance, conscious or unconscious prepossession or falsification, or even of hallucinative or delusive coloring. Yet my conclusions are fairly grounded on accurately ascertained fact.

Evidently statistics, in the ordinary acceptation of the term, can have little or no useful place in such a study; for there is no common standard of valuation which can be justly applied to the individual instances constituting any given series, and so one case unavoidably counting for much more than another in the final conclusion. The list of cases sufficiently studied for the present purpose includes neurasthenics, hypochondriacs, eccentrics, hysterics, pseudo-paranoiacs and genuine paranoiacs, phrenastheniacs, cases of *folie du doute*, disharmony, many sorts of impulsions, abnormal rhythms, psychalgias, imbecilities, and inanities—all denoting, in their way, progress more or less toward an ultimately complete insanity. Along with these have come sufficient instances of the generalized manias, melancholias, circulaires, and dementias, to admit of a most useful comparison and corrective proof. In some of the cases I have been able to somewhat closely watch the growth of the neuropsychosis out of the soil of degeneration, as provoked by the varying influences of stress. So far as possible, both the phylogenetic and the ontogenetic factors have been looked after, on the supposition that every individual is really the product of all that has gone before, as well as all that actually environs him. As none of them have come to autopsy as yet, this phase of the study is based upon the labors of others. But these have given encouragement to conduct the investigation upon the hypothesis that the manifestations of insanity are always founded on structural defects, and that these primarily are owing to arrested development,* and a subsequent faulty nurture of the individual, which has inadequately obviated or remedied this. For, obvious as it is that the various forms of stress must be momentous in the development of insanity in individual cases, it still may be premised hypothetically that true insanity or vesania is seldom owing entirely to these alone, operating by themselves in a single generation. Organisms that are structurally and functionally normal to begin with, and whose nurture throughout the plastic stages of existence has been of a nature to develop and integrate, do not break down, at least very often, in this particular way. To be sure, we may have delirium and the various generalized insanities and many other perversions of psychical activity, all of which may be owing, even primarily, to temporary ontogenetic causes, and which clinically may be very difficult of differentiation from vesania proper. Moreover, both these may be coexistent in any particular individual, and so the confusion be greatly augmented. But in the great majority of cases, where the gross-lesion, obviously malfunctioning series of causes, seems to be primarily and exclusively important, there still is the possibility that these near-at-hand steps may have had others before them which rendered the subject abnormally sensitive or unresistant to accidental influences.† In fact it may be said that in a study of this nature one soon gets the impression that even these incidentally acquired alienations will eventually be all referred to a subnormal structuralization through degenerative tendencies not yet noted.

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* Arnd, Levellain, and other German investigators. Says Dr. Clarke, in *Brain* (spring number, 1894): "Defective development of the vessels of the brain entails a predisposition to all the disorders produced by causes which exhaust the nerve centres and interfere with brain nutrition."

† Wise, in a recent investigation, finds a probable thirty-three or more per cent. of degenerates among the inmates of the insane hospitals of New York State. See *State Hospitals' Bulletin*, vol. ii, No. 1.

With reference to whether the functional disturbance of structural integrity in progenitors is primarily through neurasthenia, as the observations of Cowles * seem to imply as being most probable, or through intoxication, according to the conclusions of the French alienists (1893), based on an application of Bouchard's theory to psychiatry and neuropathology, the balance seems to be in favor of saying that in the majority of cases neurasthenia precedes but is closely followed by auto-intoxication; but that soon both act together in a vicious circle of destruction. At any rate, auto-intoxication seems to begin as soon as the tone of metabolic control is lowered, whether through exhaustion, or infectious invasion, or shock, or overstrain, or exposure. Exhaustion means cellular loss of substance, and this in turn means inefficient control of metabolism, which in its own turn means a toxic perversion of every function, together with more or less additional destruction of every element.

So, a study of the causation of insanity requires at once an account of the steps through which the underlying neuronic subnormality has come to be. That these steps have each in turn a psychical concomitant which can be noted and described, is a necessary presupposition to such a study. Moreover, by noting the progressive development of these latter in families, one ought in time to learn how to judge of the structural degeneration itself, and to refer it to certain causes discoverable in the environment. Evidently, structural degeneration does not occur spontaneously, and Darwin's "accidental" variation implies simply that as yet we have not discovered the structural steps by which variations have been effected. The Neo-Lamarckians admit the influence of environment on organic structuralization, and inductively there is no question about the advisability of accepting this view and of pursuing investigations in accordance therewith. So, then, the major premise of every study of the causation of insanity may be assumed to be this: every pathopsychical manifestation in the individual is evidence of neuronic structural defect; and, until otherwise proved, every neuronic structural defect should be regarded as evidence more or less conclusive of remote untoward influence and exercise on the part primarily of ancestry. Thus we are to look to phylogeny for the primary steps toward insanity, and to ontogeny for those which are really but secondary.

In this connection it takes but a slight exercise of the imagination to see how this all pleads, so to speak, for a speedy and positive solution of the neuronic function and its perversions, concerning which, however, we seem to be on the verge of vastly important discoveries. If Wiedersheim (1890) really has seen the nerve cells or their protoplasmic processes move, and if others can see this phenomenon also, then will either the notions of Rabl-Ruckhard (1890), Lépine, Duval, and Dercum, to the effect that the nerve cells have an amœboid movement, or those of Ramón y Cajal, that the neuroglia cells have this mobility, become significant in every way.* In either case most significance will attach to the possibility of making out associations of sensory-motor impressions by means of neuronic associations, rendered possible through amœboid extensions and retractions of either the cells or their processes or contact granules, or all combined. Systematization of psychical operations either normally or abnormally, as in true vesania, will thus be afforded a tangible foundation in the fixation of neuronic associations, and their inability to withdraw, so to speak, from contact or approximation in definite directions. This certainly will be in accordance with the functional disability displayed in cases where the hallucinations are mostly of one order, or the delusions are more or less permanently systematized. Moreover, that the amœboid motility of the neurone can become impaired by overstrain or poisoning is not less natural than are the psychical pheuomena of progressive dissociation of ideas, the confused reactions, or the feebleness which characterize instances of exhaustion or intoxication, either temporary or permanent.†

No one as yet pretends to say in what structural respect the subnormal neurone differs from the normal, although the studies of Hodge ‡ concerning the effects of fatigue upon the central ganglion cells constitute a very significant suggestion at least, in that he shows the actual condition produced by temporary stress, as well as the possible if not probable condition which may be produced by more permanent influences. Already Van Gieson # feels justified in saying that, "if the cytologist has pursued his studies of the cell to such a marvelous depth as to premise a physical basis for heredity in the chromatin of the cell, the pathologist of the present day certainly has encouraging stimulus to search out the clews of the cause of the unexplained diseases, as conducted along lines of studying the cell not from its outward form but by its internal organization." This statement is founded on his investigations of the structural changes developed in sunstroke, alcoholism, hydrophobia, and epilepsy. That, however, these changes

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* Cowles. The Mechanism of Insanity. *American Journal of Insanity*, 1891.

* Dercum on Functions of the Neurone *Transactions of the American Neurological Association*, 1896, p. 7.

† As the last word of this paper is written, the *Medico-surgical Bulletin* for April 25th, containing Dercum's paper read before the Philadelphia Medical Society on February 21st, reaches me. In it I find these pregnant words: "The direction of thought and the association of ideas must depend largely upon the frequency and the consequent readiness with which special combinations among the neurones have been or are formed." Dercum applies this to the explanation of hallucinations, illusions, delusions, confusional insanity, hypnotism, etc.

‡ *American Journal of Psychology*, vols. i, ii, and iii.

# *State Hospitals' Bulletin*, vol. i.

must be considered as being really gross, when compared with the exquisitely finer ones which have marked the various stages of progress from the beginning, may be undoubted. But what these latter are, what went before the final explosion, what peculiarity of structure permitted one individual out of numbers to be seriously affected, is still unascertained; yet there must have been something which distinguished the one from the others. And so we may say with reference to the results of stress as presenting themselves in insanity. Commonly one individual breaks down while the rest bear up; and the reason undoubtedly lies in individual subnormalities of structure, still needing investigation and discovery. The gross result in both acute and chronic diseases of the nervous system seems to be of the character of a true parenchymatous degeneration, and this without reference to the various causes. Van Gieson holds that this comes about through reactions between the cell contents and the fluids which environ them. If the degenerative process in any given case has remained within cytolitic limits then is resolution possible. If, however, it has proceeded to the stage of cytoclasis, then is the damage to the neurone absolutely irreparable.[*]

Just what takes place in the neurones is not limited to the cells proper, but extends to their protoplasmic prolongations as well. Says Andriezen:[†] "Our observations show that changes of a striking and unmistakable character occur in the ultimate protoplasmic expansions and 'contact granules' situated upon them, on the one hand, and in the ultimate naked fibrils (collaterals and terminals) which everywhere come into relation with such protoplasmic termini and granules, on the other. Beginning with a softening and swelling of these contact granules and also of the protoplasmic twigs on which they are situated, the earliest noticeable changes are a coalescence of these into small, irregular 'composites' of such, recognizable here and there as a local coarseness. As the changes progress in coarseness and extent, they can be more readily recognized as commencing moniliform swellings along the course of the terminal protoplasmic twigs. . . . With the further progress of the lesion these softened and enlarged protoplasmic masses form irregular botryoidal masses, mainly clothing the now irregularly clothed protoplasmic stem, which itself rapidly becomes softened, attenuated, and excavated (vacuolated) in places, till finally what is left is a mere ghostlike, tattered protoplasmic stump, such as some of the cells exhibit. . . . Here and there at the side of the cell body the protoplasm seems to be frayed, and, as it were, eroded or ulcerated away, the site of such being a local excavation of the cell protoplasm, with an adjacent little heap of *débris*."

Berekley[‡] affirms that "along with the first confusion and incoordination of psychic functioning there is injury and atrophy of the lateral gemmules of the protoplasmic processes of the nerve cells," and he found in alcoholic poisoning that the "small capillaries were shrunken and irregular, the nuclei altered in disposition, size, and contour, the perivascular spaces were enlarged and empty or filled with *débris*, the neuroglia cells were smaller, and there were disappearance of granules, swellings of neurodendrites, with roughening of both the cell body and its larger processes." Van Gieson[*] cherishes the expectation that in myxœdema, in the late neural manifestations of Addison's disease and diabetes, in tetany, Basedow's disease, the epilepsies, in many of the melancholias, manias, periodical insanities, and very many other forms of mental disease, that similar phases or results of neural parenchymatous degeneration will be found to furnish a definite basis to explain the parallel psychical manifestation.

Turning now to the steps which initiate the development of vesania, the one most frequently noticeable may be very chiefly comprehended under the term unphysiological marriage. By this term I do not mean to imply the marriage of people who are obviously diseased or deformed. On the contrary, the parties entering into such an unphysiological marriage may both be normal individually, but yet not physiologically marriageable, because they are either too distantly or too nearly, or, in fact, too unphysiologically, related, either physically or psychically. In such cases the ultimate outcome is almost absolutely certain, and is noted chiefly by a definite class of tensions and reactions of both mind and body which invariably impress themselves upon progeny, and which are for the most part first made obvious in this particular way. No matter how unphysiological such marriages may be, however, they do not necessarily or very often result in the evolution of insanity in the parties contracting them, but rather they do lay the foundation of degenerative tendencies which almost invariably predetermine the development of this affection in more or less remote succeeding generations. Nor do the children of such marriages necessarily or generally become insane, although they sometimes do; but, impressed as they are by the degenerative malnutritions and tensions and reactions of their parents, they tend to exhibit arrests and eccentricities of development, which in turn become intensified in the next, and again in turn in all the generations following, until the instability becomes so marked that explosion occurs. In passing, it may be said that the most frequent source of the initiatory tensions and reactions resulting from unphysiological marriage is undoubtedly found in abnormal cohabitation and the unrest and unsatisfaction and exhaustion resulting therefrom. Such a condition of things begets in perfectly normal people an irritating, nagging, exhausting, persistent erethism, which in time involves the whole organism and deflects it from its norm. Two people enmeshed in such a bond always go to excesses and irregularities, either incontinence or indulgence, simply because of the fact that they never experience any release from the erethistic tension; or, if not this, then the whole matter becomes aversional, with straining antipathy, perverting practices, and ideational distrusts and loathings more and more predominating.* No wonder that such people predetermine succeeding generations to abnormal sensitiveness, irregular growth, and erratic manifestations in both mental and physical spheres.

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[*] *Op. cit.*

[†] *Quarterly Journal of Insanity*, vol. xviii, p. 5.

[‡] *Medical News*, November 9, 1895.

[*] *State Hospitals' Bulletin*, vol. i.

Outside just what limits unphysiological marriage may be recognized remains to be ascertained. That marriages between different nationalities, between too great disparity of physique or of age, between too great differences of æsthetic or of religious convictions, furnish illustrative examples of dangerous overstepping, there is ample proof. We know, too, that consanguinity is dangerous, and that certain diseases raise a formidable question. What else there is that has a tendency to abnormally heterogenize and otherwise degenerate progeny needs working out with altogether more precision than it ever has been. That, however, the unblended constitution furnishes the ground field of much vesanic possibility becomes more certain with every closely studied instance. In fact, investigations thus far tend to prove that the important beginnings of most instances of degeneration are to be referred to the one step of unphysiological marriage, and the heterogenizing and disaggregating stress which grows out of it. Something like ninety per cent. of the cases upon which this paper is founded may be so referred. The scientific deduction would seem to be that before marriage becomes an institution for the production of normal and evolutionary progeny, due heed will have to be given to the adaptation of the contracting parties to the exercise of this most vital function; and that, until intelligence and rationality do prevail here, vesania will continue to hold its own or perhaps increase. Pedagogically, here is a field indicated which neither the educator, the legislator, nor the neurologist can afford to disregard; for every case points unmistakably to the need of a universal education and preparation of young men and women with reference to just this distinction between physiological and unphysiological marriage. As a result of a fairly close study of one hundred instances of married life, taken as they have presented themselves from the mixed walks of life, I am not afraid of successful contradiction when I affirm that considerably over one third of them are to be classed as unphysiological, and this without including public offenders either. And, moreover, it appears that the more refined and exquisitely developed people are, the greater is the probability of this being the case. With progressive mental and nervous refinement there should be simultaneously exercised a preparatory discretion based on science, intelligently comprehended and adapted.

Another sort of unphysiological marriage which involves a succeeding step belonging to this group of primary steps toward insanity, is the one so readily entered into especially by those who are really the most unfitted to do so—namely, that in response to the fascination which degenerates themselves so frequently have for one another, and which results so surely in perpetuating and intensifying the degenerative strain. The "accident or propinquity" seems to predominate here, and the entire results are unaccountable. What a pity these people, before committing themselves, could not be made to understand the fact that Nature always tends to correct existing evils, providing the proper regenerative steps be taken in accordance with this same law, through the admixture of healthier blood, and thus deflecting the course of development away from the downward and in the direction of an upward tendency. But what a question arises here! Even if the interests of the degenerate require that he should marry none but a normal person, what shall be said of thus deliberately cheating the same normal organism out of its own legitimate right to its own normal progeny? A strict course in marital pedagogics would raise the ethical consideration whether degenerates should thus vitiate the stream of physiological tendency. And when this time comes, it will be neurology that will have to answer the question whether individual preferences shall always weigh supremely against the possible degeneracy of children.

Another step toward initiating or confirming the vesanic tendency is taken when two healthy, well-mated people vitiate themselves by overstrain and worry, and the nutritional perversions resulting from these during the child-conceiving and childbearing period. No one can estimate the percentage of insane who have become so chiefly because of the fact that their ancestors, near or remote, or both, were so exhausted, poisoned, or perverted when their progeny were conceived and born, that these were never given an integral structure, or a normal functional basis of any kind. So long as egoistic, rapid adult success is allowed to dominate the married life, so long will there continue to be impaired nutrition through developed exhaustion and intoxication, and so long will there be given a hypersensitive and unresisting endowment to progeny. When we remember that all the nervous elements are definitely blocked out by the end of the third month of embryonic life, and that thenceforward the neurones develop steadily in obedience to combined afferent and nutritional stimuli, some one hundred and twenty-fivefold before birth, it is supposable, at any rate, that the kind and frequency of this stimulation may have much to do in the determination of the quality of the elements which shall be finally made up. Evidently here is where stress of any kind can exert a most baneful influence. And here is another field which needs investigating in accordance with the most approved methods of psychological and psychiatral research; for, notwithstanding that heretofore considerations of anticipated marriages have quite exclusively centred about the position, fortune, or the personal happiness of adults, and that our highest sentiments have implied the latter as the *summum bonum* of expectations, studies of the degeneration which leads to vesania bring one to the conclusion that the child should be the pivotal consideration, or else the joys of parenthood should in many cases be foregone. In regard to parenthood generally, the conclusion seems to be perfectly tenable and well supported that only those people who contract a physiological marriage, and who afterward lead a physiological life, have any natural right to expect evolutionary progeny, or to be able to obviate the course of any given downward tendency. As Huxley so emphatically said, outraged law knows no mitigating circumstance; and ignorance, best intentions, chance-taking, high aspirations, seem not of themselves to bear helpfully upon the final result. Science should furnish something which shall.

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* Baker. *Journal of Nervous and Mental Disease*, vol. xvii, p. 669.

Turning now to the individual, aside from reference to his heredity, this investigation bids us note that the first ontogenetic and hence secondary step toward insanity is effected in the inadequate homing which so many parents provide for their children. This is quite as frequently found among the higher, wealthier classes as elsewhere. Money, the ordinary education, social position, parental desire, and usual effort, do not assure the essentials of a home, which really consist in adequate mothering and all that this implies. No matter what else, the child that has no real mother (that is, a mother who has conceived it in love, carried it in progressive faith, energized it along lines of intelligent, hopeful living, and nourished and nurtured it as her divinest responsibility) is indeed handicapped forever. Of course, the father should not be left out of the account entirely, for through the mother, if not directly, he exerts a more important influence than is sometimes estimated. But most of the world needs mothering in a sense not yet very prevalent, to say the least. Neurology may well pity the inadequate motherhood of to-day; it knows full well its weakly, painfully carried burdens, and its consequent breakdowns, but it demands, nevertheless, that the child be adequately homed and mothered even from the preparations for the very beginnings of its existence to its final escape from parental authority; for in the kind of home which the mother makes does the child get its predeterminations augmented or lessened to a fateful degree. The mother who does not nurse her own child, who places selfish or social or other privileges or duties ahead of her special function, or who, perhaps, seeks to avoid the exercise of the latter entirely, may do more toward fixing the degenerative tendencies of her child than all other influences combined. At any rate, so this investigation has brought most vividly to view. Nor may we forget the incompetent care-takers and companionships of the household, who are quite as apt to simply vitiate and intensify all the evil there is. Neurologically, there is a demand for a parenthood which shall live *with* its children (Froebel) much more than either for them or without them; and no one can escape the fact that all through baby and childhood days the parents and the associated household constitute the model-complex which, according to Baldwin,* enables the child to at first differentiate its own personal, and then later, according to Royce,† its social selfhood; while if the thesis contended for by myself in the *Psychological Review* ‡ be correct, then must we add the maintenance of its permanent self-identity. Quite likely failure just here accounts for much that seems "mysterious" in defective adult personalities.

One hesitates to speak of the next step, and yet accurate observation reveals that much of our so-called "education" is directly along the line of favoring degeneration rather than the reverse. In almost every instance I have come across the result of some big educational blunder, owing either to the system in vogue or else to those who execute it. This latter-day fetich, like all other fetiches, brings to its worshipers a tide of ill for the time being beyond successful management. The one thing encountered most frequently is the disaggregated, scatter-brained, loose-moraled results which have accrued mostly from a want of actual study of the child itself and its needs while young. That anybody ever gets through our schools with adequate power of concentration and persistence, with any sort of personal reactions that are at all serviceable, or with the ordinary somatic resistance or endurance, is almost a wonder. What of these is left seems to be in spite of the school studies and disciplines, and more because of the social conditions in and out of school, which require actual personal energizing and differentiating, and so more or less favor individual growth. Of course, no fault can be found with the purpose underlying our educational system. This may be assumed to be high and comprehensive. But the trouble comes from estimating everything from the adult, rather than from the child, standpoint and need. The one fact that there is little or no provision made for the study and training of so-called exceptional children—the waywards, the defectives, the vicious, the puny—indicates that we have not yet risen to the importance of real education as contradistinguished from universal book learning. Education which does not take the individual and develop him symmetrically is physiologically defective. And yet we wait until the course of degeneration has proceeded to a fatal degree before we take any particular interest in it. Neurologically, the time to stay the course of degeneration is surely in the beginnings, if anywhere. Nor is this all, nor perhaps the worst, so far as this source of mischief is concerned. Every year brings its additions to the curriculum, although even now the child is rattled with so many things that he really ought to develop craziness to be at all logical. The one most important step, that toward incompetency of association by neurones, and subsequent insanity, is unwittingly and sedulously cultivated from beginning to end, and with no thought of the danger involved. We all admit that proper education ought to, and undoubtedly does, hinder the degenerative development; but, neurologically speaking again, better no school than an improper one; better the children in the fields with one book, and Izaak Walton or John Burroughs for a teacher, than the present arrangement of stifling schoolrooms, machine pedagogics, and examination day with all its preliminary tension and apprehension, and its ultimate shock.

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* *Mental Development*, New York and London, 1895.

† *Psychological Review*, May, 1895.

‡ *On the Identification of the Self*, May, 1897.

Along with this matter of systematic education should be considered the direct and positively untoward influence of the practice of so universal a leaning upon proxies of various kinds. One easily discovers that the endowment of strong, independent, self-directing individuality is exceedingly rare. Instead of being independent and assertive, very many tend to use some sort of prop to their otherwise wabbling personality, and seldom to little or no good. Or, if not this, then they have resort to internal props in the way of alcoholic or other stimulants. One notices this in connection with daily practice, wherein dependence on some of these things is so hard to remedy. Little wonder that both somatic and psychical reactions become morbid, and capable of fixing in pathological directions.

Another phase of inquiry has been with reference to the part actually played by diseases and accidents. Under the generic name of stress, Mercier includes disease, fright, grief, anxiety, injury, habits, social environment, etc., and the value of these must be estimated in every case. But I have been surprised often at the amount and duration of stress which normal individuals are capable of enduring without even approaching to a mental breakdown. Undoubtedly the worst feature in connection with disease or accident is the augmented and intensified disease consciousness, which really is so many times the basis of abnormal worry, and which grows out of a frequently recurring experience of this kind, either in the individual or in the community. Nor need this develop to the stage of pathophobia to be harmful. Ordinarily there is a widespread lowering of health tone and of ill-health resistance, through cumulative suggestion from popular discussions of ill-health matters, especially those referable to heredity and infection. People, as a rule, see only sources of danger in these, and have not learned their constructive and conservative possibilities at all. Of course, this is nothing new in the experience of the race, only that now it is unusually marked, and must be given attention accordingly. That the influence of this upon the growing personality, whether ante-partum or post-partum, is worthy of note, these investigations fully disclose. Inquiry into the sources of supersensitive disease consciousness has again brought to light evidence to show that, so far as the individual span of life is concerned, emotion must here bear the brunt of the value of disease in the causation of vesania. Very much may be interpreted to prove the truthfulness of Dr. James J. Putnam's idea of the initiatory step in Graves's disease. The rebound from an emotional shock and the erethism from an emotional strain seem to stand primarily both in time and importance.

In regard to religious and allied forms of conviction, there is little to show that these are to be considered as primarily important at all. The normal man is religious by nature, and is helped by his beliefs and worship. What is shown, however, is that declining to exercise any sort of religious faith, or undertaking to set up antagonisms and egoistic substitutes, may be looked upon as a sort of *prima facie* evidence of degeneration more or less pronounced. The religious fickling also certainly lacks much that gives poise and hope and health as well. This age can not afford to let the term "consolations of religion" become obsolete; nor can neurology decline to notice the bearing of subnormal or irregular "tone" of any sort upon the initiation and course of degeneration. If structure determines function, exercise none the less determines what sort of structure shall be grown.*

Deepest interest centres about the period of second birth at puberty, which involves the simultaneous transition from an ego-centric to an altruo-centric scheme of life. Arrest of development just here is presented as a serious matter; and a fixation of the organism at this point may lead to all the difference between systematized delusions and normal logical beliefs later on. I have yet discovered no instance of hebephrenia, hypochondriasis, hysteria, or of pseudo-paranoia that has not been predetermined by heredity and faulty nurture; while the sexual perverts and neurasthenics of early life seem invariably to be formed on a similar groundfield.

Altogether, it appears plainly that the steps toward insanity are to be looked for chiefly in ancestry and faulty nurture, and that when found each step will prove to be definite and also perfectly intelligible. If so, then the science of vesania prophylaxis may lead to a prophylactic art not more accurate than useful.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending July 31, 1897.*

KINYOUN, J. J., Passed Assistant Surgeon. Designated as delegate to represent the United States at the International Conference relating to Hygiene and Sanitary Service on Shipboard and Railways, to be held at Brussels, Belgium, July 29, 1897; also designated as delegate to represent the United States at the International Conference to discuss the Leprosy Question, to be held at Berlin, Prussia, July 29, 1897.

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* According to a fundamental law of biology, the constant execution of definite functions gradually effects structural modifications. Ziehen, *Introduction to Phys. Psychology*, Trans., p. 7.

WHAT MUST WE DO TO BE SAVED FROM TUBERCULOSIS?*

By E. F. BRUSH, M. D.

You may remember the story of Paul and Silas: during their missionary work in Thyatira they found a young woman possessed of a spirit of divination; they removed from her this spirit, and thus interfered with her masters, who used her as a means of making money. The apostles were imprisoned for interfering with a commercial enterprise, and while they were in prison an earthquake occurred that destroyed the building, and by this means all the prisoners were released. The jailer, in his intense chagrin at the escape of the prisoners, was about to commit suicide when Paul cried out to him, "Do thyself no harm!" and he, knowing that Paul and Silas possessed a knowledge of salvation, said to them, "Sirs, what must I do to be saved?"

Now, in almost the same spirit of missionary enterprise, we are trying to cast out an evil spirit from a bovine female; this female represents a great business interest, and many of the men who own this female do not want us to interfere with their commercial interests, but the people, like the frightened jailer, are calling out to us, "Sirs, what must we do to be saved?" I think it can be safely said that many of us know that our present condition is dangerous. Both by omission and commission we are far from saving grace. The taint of consumption is in us and also in our neat cattle, and in this respect there is no health in us. Therefore the gospel question naturally occurs. What must we do to be saved?

There is a coincident distribution of bacillary tuberculosis in the human and bovine species. This disease can be conveyed from one animal to another. We eat and drink the meat and milk of the dairy cow, and this animal only comes in contact by association with a very small proportion of the human race. In her food she takes nothing that was part of us, while we drink her milk as long as she lives and then devour her body. Each single animal is thus distributed as food to hundreds of the human order. If the disease can be conveyed in food it requires no argument to point out which of these species, the human or bovine, is most dangerous to the other. I have repeatedly stated what I still firmly believe, that all the tuberculosis afflicting the human race comes from the dairy cow either directly or remotely, but, to avoid argument, it is safe to say that if the dairy cow were not affected with tuberculosis there would be much less of this affliction in the human race. So, to answer the question, we can say, "Cure the bovine race," and this can not be done with the political syringe man. It can only be accomplished by rational hygiene, proper breeding, feeding, and treatment, and when the attempt is made to cure it in this manner many of you will be saved as surely from tuberculosis as Paul and Silas thought the frightened jailer was saved from sin.

In looking back over marked episodes in the history of the human race, one characteristic stands out in bold relief, and that is the tendency of the human family, when some great discovery is made, to go to either extreme and thus delay the enjoyment of the discovered golden mean that lies always between the two extremes.

The history of vaccination is an illustration, so is the development of common-sense cleanliness into Listerism. In truth, virtue lies between two extremes, and both of these extremes are vices. Between foolhardiness and cowardice there is true courage; between the miser and the spendthrift is the prudent man. Now, there lies before us the great and virtuous necessity to eliminate from the bovine race the taint of tuberculosis. This virtuous necessity lies between two extremes: one is to let matters alone, the other is represented by the frantic efforts of State boards to stamp out the disease by killing a few of the animals afflicted, and not attempting to interfere with the conditions that generate the disease. The present effort to stamp out tuberculosis from the dairy cattle of this country is as absurd as it would be to attempt to stay an epidemic of typhoid fever by killing every one who contracted the disease and paying no attention to the source of contagion. I have watched carefully for years the action of State authorities in their attempts to eliminate tuberculosis from the dairy, and I firmly believe that more positive injury has been done by their extreme variance from the proper course than would have resulted from leaving the matter entirely alone. Let me give you an illustration among the many I have observed. I know one dairy that has been visited twice by inspectors with syringe and lymph. This stable has always been positively dirty, ill-ventilated, with poverty and carelessness to make all the other conditions just necessary to develop tuberculosis in an improperly bred animal. The inspectors have killed off their quota of animals from this stable and, without hygienic, dietetic, or any other improvement in the environment or care, the owner was simply left poorer, and so forced to buy a lower grade of cows, to fill his denlike place with more tuberculosis. There must be a cause for the large number of cows that are afflicted with tuberculosis, and is it not ordinary, plain common sense to assume that the place to attack the disease is at its fountain head? We all know that close confinement, poor food, prolonged lactation, early and prolific maternity, consanguineous breeding, all or any of these conditions favor the development of bacillary tuberculosis, and all these are the common conditions of the dairy, with the addition of dirt and carelessness. The statute laws of this State and of many others in the Union are sufficient, if honestly and conscientiously enforced, to make a better beginning in stamping out the disease than if ten times the amount of money that had been asked for by the different State boards of health had been granted and put into the hands of the politicians as pay for working the syringe, lymph, and thermometer.

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* Read before the Medical Society of the County of Westchester, N. Y., May, 1897.

There is no branch of domestic science that has been so studiously neglected as bovine pathology. The term "cow doctor" has always been used among veterinarians as a designation of stupidity. When I began the study of bovine medicine I could not find anywhere in the world a text-book giving the correct bovine temperature. The veterinary colleges have kept equine, canine, and even feline pathology up to the times, but the cow in the college has received the same treatment that she has on the farm, been put into the basement to get what nothing else would take—the refuse.

What we want is intelligent bovine veterinarians, men who do not require Koch's doubtful lymph, but those who are possessed of a proper knowledge of the hygienic conditions necessary to insure the health of animals, and to discover the existence of other diseases. Tuberculosis is undoubtedly a devastating scourge to the human race, and it comes largely if not entirely from the bovine race. We can have dairy cows that are not afflicted with it, but not by waiting till they contract the disease, and then killing them. The disease itself will do the killing if it is given time. What we want is doctors who can prevent and thus cure without killing, and such doctors can save thousands of infants' lives by eliminating from the dairy other diseases and conditions that go with tuberculosis in our dairies, but that kill quicker than tuberculosis. This can be largely accomplished without any change in the present laws: all that is required is honest and intelligent bovine veterinarians. The spirit which at present seems to animate some dairy inspectors is revealed by the following letter which I quote from the *Medical Review of Reviews:*

"Dr. J. M. O'Neil, of Buffalo, writes to the editor of the *Buffalo Medical Journal* as follows: Sir: I send the following account of some cases which have been brought to my notice, exemplifying the manner in which the bacilli of tuberculosis may be conveyed through the agency of milk. The details of the following cases have been supplied to me by a veterinary inspector, who was engaged in his duties in Cattaraugus County, some sixty miles distant from Buffalo. When there he was requested by a farmer to inspect and test his two herds of cows. He complied with the request, and in the first herd, numbering eighty, he found eight to be infected with tuberculosis, and in the remaining herd he found twenty-five out of a total of thirty animals, infected. A neighboring farmer then asked the inspector to test his herd. He did so and found all healthy. The calves bred from some of the cows were then tested, and it was discovered that many were infected. The owner of the calves gave as a very plausible reason for the infection the fact that he was in the habit of buying skim milk and buttermilk, with which to feed the calves, from farmers living in the immediate district, and among others from whom he procured this milk was the farmer whose herds the veterinary inspector had tested and found several of the cows to be suffering from tuberculosis. Of course, the foregoing account only goes further to prove the already well-known fact of the danger of spreading contagion by milk. . . . In these particular cases, however, the danger affects Buffalo rather closely, for I also ascertained from the inspector that milk from these diseased herds was daily brought into Buffalo and sold on the streets by peddlers. *The names of the peddlers were, as a matter of course, withheld from me.*"

If it were not sad it would be funny to see a great State like New York paying dairy inspectors to discover the source of milk supply that conveys tuberculosis to calves, and refusing to give the physician the necessary information that would enable him to guard his patients who were in peril from the same source. But, then, this inspector is not called on to kill the babies if they contract the disease, but it means more work for him if the disease is scattered among the herds of cattle in his district. This ridiculous condition of affairs will continue until honest common sense indicates to our health authorities how to attack the great danger emanating from the cow stables all over the land. What is the whole foundation of Listerism but cleanliness? If the surgeon of fifty years ago had been told that he was criminally filthy when he carried his instruments in a beautiful-looking, deep-piled, velvet-lined case, and, after opening a malignant abscess or bubo, he simply wiped his instrument, to make the blade bright and prevent it rusting, he would have resented the accusation as a malicious libel. But to-day he could be convicted of criminal carelessness for the same thing by a due process of law. Antisepsis is just plain, common-sense cleanliness. Dirt has been defined as matter in the wrong place. Growing plants thrive and flourish in the presence of material that is foul and noxious to growing animals. There is nothing dirty or filthy when it is in the right place. Cow dung, urine, and effete matter from the lungs and skin will make healthy fodder for the animals that eliminate it when the material is put in the right place under proper conditions. But cow dung plastered over the sides of the cow, or allowed to accumulate in the living place with the animal that drops it, standing constantly in the dung and urine she herself makes, besides fouling the air, gives rise to foot-foul and other painful afflictions that are markedly debilitating; breathing over and over again the same air must lead to pulmonary susceptibility to disease; feeding on the refuse matter from distilleries, breweries, glucose and starch factories must tend to nutritive ailments, and all these common conditions of our dairies generate a marked susceptibility to profound constitutional diseases of which tuberculosis is the chief. Many people who are not familiar with the condition of a large number of our dairy stables may imagine that there is some exaggeration in the foregoing statements, but I have never seen any one who, without previous knowledge of the existing conditions, after having made an inspection of a number of dairies furnishing milk for food, has not returned without a profound disgust at the state of affairs. It is not uncommon to find fifteen or twenty cows confined in a damp basement where no effort is made to observe cleanliness, and every effort possible is made to exclude external air during the cold weather, and thus the cows are kept warm by their own reeking breath, made doubly noxious by the accumulating filth and the stench from the refuse food.

The milk from these animals is received in vessels seldom or never properly cleaned, and taken to be bottled or canned into the dwelling house, where poverty and a natural tendency to shiftlessness make everything as dirty as it is possible to be. I will guarantee to direct anybody to dairies where the foregoing conditions prevail and the milk is sold for infant feeding. Will any reasonable man affirm that the State is doing its whole duty when it sends an inspector to such a stable to kill a few of the cows and do nothing more? The following is the State law that applies to just these cases, and is copied from the Revised Statutes, vol. i, under the head of Dairy Products, sec. 12:

"*The Proper Care of Cows, and using Diseased Milk in making Articles of Food.*—No person shall keep cows for the production of milk for market, or for sale or exchange, or for manufacturing the same or cream from the same into articles of food, in a crowded or unhealthy condition, or feed the cows on food that is unhealthy, or that produces impure, unhealthy, diseased, or unwholesome milk. No person shall manufacture from impure, unhealthy, diseased, or unwholesome milk, or of cream from the same, any article of food. Whoever violates the provisions of this section is guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars nor more than two hundred dollars, or by imprisonment of not less than one month nor more than four months, or by both such fine and imprisonment for the first offense, and by four months' imprisonment for each subsequent offense."

Would it be unreasonable to assert that the enforcement of this section of the statute would do more for the stamping out of tuberculosis than all the efforts that have heretofore been made by State authorities? I have kept pretty close watch of the work being done in this State by the authorities whose duty it is to enforce the laws relating to dairies, and I have yet to see where any one has ever been apprehended for a violation of the above section, and I know that this section of the law is frequently and largely violated. The greatest number of prosecutions has been against the oleomargarine dealers.

This may be proper commercially, but from our point of view, as medical men, it would be of greater benefit to the health of the State to let the imitation butter alone and improve the health of our cattle and the purity of the product derived therefrom.

I have often been asked why I do not bring proceedings against violators of the law if I know of such cases; but, as I myself keep cows and sell milk, my motives, if I took such action, would be liable to misconstruction. Now, to sum up, what I would recommend, if my opinion were asked, would be, first and foremost, to educate inspectors to a thorough knowledge of the conditions necessary to breed and feed and care for dairy stock in such a manner that there would be the least possible disease and danger; and then an unbiased enforcement of the law as it exists to-day, turning the commercial superversion into another channel. In fact, the bureau of agriculture of the State of New York takes good care to-day of the commercial interests involved in the dairy business.

For the immediate improvement of our milk supply, I would recommend the formation, in every community, of a society of dairy supervision; this society to be composed of doctors and veterinarians, who will make rules to govern dairies in their vicinity, and who will certify as to the quality of milk supplied to the community by dairy men who are willing to obey and positively carry out the rules of the association. This to be called "approved milk." Probably one of the greatest obstacles to the proper conduct of a dairy is the low price of milk, and if this association of dairy supervision was properly conducted the "approved milk" would command a better price. When milk is produced, as it ought to be, for the health of the community, it must bring a larger price than it commands now.

When it is not possible or advisable to form dairy supervisory associations, if our local boards of health, instead of making health codes that are never enforced, would inspect the dairies in their vicinity and, where they found any that were filthy and contained diseased cows, report this to the dairy inspector of their district, and, if the inspector would not perform his duty properly, proceed against him. In this manner the laws as they exist now could be enforced, and thus the dairy cow would become what she should be—a useful and not a dangerous animal.

Therapeutical Notes.

Formalin in the Treatment of Tinea Tonsurans.—Solares (*Archivos de Ginecopatía, Ostetricía y Pediatría*, No. 9; *Therapist*, July 15, 1897) has treated twenty-five cases with formalin. The affected part is shaved and then rubbed daily with a forty-per-cent. solution of formalin, either with a brush or with an ordinary compress, which is allowed to remain for ten minutes. If a large surface is affected, it is better not to treat it all at once, but in sections. In some patients the remedy occasions a temporary œdema of the face, and some complain of smarting under its use.

Paraplasts.—This is the name given by Unna (*Monatshefte für praktische Dermatologie*, July, 1897; *Centralblatt für Chirurgie*, July 17, 1897) to certain plasters made by Beiersdorf, of Hamburg, characterized by extraordinary fineness of the fabric on which they are spread and by their close resemblance to the skin in color. They are medicated with various substances, such as zinc oxide, salicylic acid, mercury, etc.

Pills for Constipation in Children.—Pruys (*Journal de médecine de Paris*, July 18, 1897) is credited with the following:

℞ Extract of cascara sagrada		30 grains;
Extract of frangula		15 "
Powdered aloes, Powdered gentian,	each	60 "
Medicinal soap		a sufficiency.

M. Divide into eighty pills.
S.: From one to four pills to be taken at bedtime.

Boroglycerolanolin, a New Excipient.—Pruys's formula (*Journal de médecine de Paris*, July 18, 1897) is as follows:

℞ Boric acid	8 parts;
Glycerin	50 "

Dissolve, and add:

Paraffin	120 "
Anhydrous lanolin	60 "

A Powder for Vaginal Injections.—The following formula (*Semaine médicale; Progrès médical*, July 17, 1897) is attributed to House:

℞ Powdered alum, Powdered boric acid, Powdered borax,	each	1 ounce;
Hydrastine sulphate		9 grains;
Carbolic acid, Essence of cinnamon,	each	20 drops.

M. For each injection, dissolve a teaspoonful of the powder in a pint of water.

Ichthyol in Scrofulous Blepharitis and Keratitis.—Sehlen (*Clinique ophthalmique*, 1897, No. 3; *Therapeutische Wochenschrift*, July 25, 1897) recommends the following ointment:

℞ Ichthyol		1 part;
Powdered starch, Zinc oxide,	each	20 parts;
Vaseline		50 "

M. To be applied to the edges of the lids night and morning.

The Administration of Sodium Salicylate.—Bricemoret (*Journal des praticiens; Lyon médical*, July 25, 1897) recommends the following formula:

℞ Sodium salicylate		90 to 120 grains;
Syrup of bitter-orange peel, Distilled water,	each	2 ounces;
Curaçao		1 ounce.

M. This amount to be taken in the course of twenty-four hours, each dose in a small glass of carbonated water.

Large Doses of Bismuth Subnitrate in the Treatment of Round Ulcer of the Stomach.—At a recent meeting of the Turin Academy of Medicine (*Indépendance médicale*, July 28, 1897) Sansoni reported that he had employed bismuth subnitrate in four cases of ulcer, in two cases of excess of hydrochloric acid in the stomach, in two cases of cancer, and in a very severe case of hysterical vomiting. The results had been excellent, particularly in the cases of ulcer. The size of the doses is not mentioned.

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THE ABUSE OF MEDICAL CHARITY.

FROM Dr. Huber's paper, from the discussion that took place at a meeting of the Society of the Alumni of the City (Charity) Hospital, and from Dr. Currier's letter, all of which we publish this week, the reader may inform himself of almost every shade of opinion and feeling held by members of the profession in New York in regard to an abuse that undoubtedly exists and unquestionably calls for some radical measures for its abatement. Physicians are as ready now as they ever have been to give their services freely for those to whom it would be a hardship to pay even small fees. By this we do not mean merely that they are willing to render gratuitous services to paupers, for that degree of charity would be no higher than that of the almshouse. Apart from the paupers, apart from those who confess to themselves and take no pains to conceal from others that enduring poverty, wretched poverty, is their inevitable destiny, there is always present in such a community as ours a large class of men and women who are temporarily hard pressed to maintain themselves, but who fully expect, or at least hope, to regain something like the degree of prosperity that has been theirs in times past, and who are quite justified in entertaining such expectation or hope. Those persons have sense enough to know that they must keep up appearances or else give up the struggle. They will not part with the fine clothes and personal trinkets that they still possess, or even cease to wear them; to do so would be to make themselves shabby and, as they are very well aware, to put themselves at an immense disadvantage in their endeavor to get a new grasp on means of comfortable living. But they will in many instances accept gratuitous medical services—some of them thankfully and with the full intention of rendering compensation in some shape when times are again good with them, but others with no better feeling than that of a gamester who, having lost his "pile," sets about to steal chips wherewith to continue the game. The problem is to distinguish the one class from the other. It will not do to conclude, because a man wears diamond shirt-studs or because a woman has on an expensive and fashionable sealskin garment, that he or she is imposing upon us; and it will not do, on the strength of appearances only, to cross-question the person or to set a detective at work, unless, indeed, we are willing to take the risk of inflicting unbearable humiliation upon the subject of our investigation. With all this difficulty in the way of a just discrimination between the self-respecting and well-meaning unfortunate and the persistent "bummer," it is better that some of the undeserving should be served without question than that one of good character should be put to pain by an inquiry into his means.

There is one thing, however, that can be remedied and ought to be at once. We mean the nominal charge made at some of the hospitals and dispensaries, the "dollar a month" treatment and the charge of a few cents for each prescription filled. It engenders in the applicants for medical aid the feeling that they have paid adequately and are entitled to be as exacting as they please. Moreover, with all our willingness to work gratuitously for the poor, we do not feel called upon to work for pay, however inadequate, rendered to an institution in the management of which we have no voice. The imposition of these petty charges for the alleged beneficent effect of relieving the poor man's mind of the galling thought that he is dependent on charity seems to us unwise; we know of no good reason why charity should be masked, why it should not be acknowledged.

THE TREATMENT OF GENERAL SUPPURATIVE PERITONITIS.

At the recent annual meeting of the Medical and Chirurgical Faculty of the State of Maryland, Dr. J. M. T. Finney, associate professor of surgery in the Johns Hopkins University, read a paper entitled Five Successful Cases of General Suppurative Peritonitis Treated by a New Method. The paper, with an appended note giving briefly an account of a sixth case (in which the result was successful only to the degree of prolonging the patient's life for some hours and promoting her comfort), is published in the July number of the *Johns Hopkins Hospital Bulletin*, and the same number of the *Bulletin* contains an account by Mr. Arthur W. Etting and Mr. William J. Calvert of their experimental study of the treatment on dogs, undertaken in the anatomical laboratory of the hospital.

After remarking upon the rarity with which recovery follows laparotomy for purulent peritonitis, Dr. Finney calls to mind the general agreement among experimenters that under favorable conditions the peritonæum is capable of taking up a relatively large amount of infectious material and of disposing of it effectually. But, he says, these observers were dealing with a more or less healthy peritonæum, whereas one has very different conditions to deal with on opening the abdomen of a patient suffering with general suppurative peritonitis. He adds, however, that his clinical observations have hardly seemed to bear out Pawlowsky's idea that the lymph-channels leading from the peritoneal cavity are choked with infectious bacteria and inflammatory products in purulent peritonitis, and that thus the efficiency of the peritonæum is greatly impaired.

Having considered the question of whether the peritonæum did not still retain its absorptive power even under these most unfavorable conditions, Dr. Finney concluded that the methods of operating in vogue were inadequate in that a sufficient amount of the exudate was not removed and the peritonæum was left little better off than before. He therefore devised the following method: The incision is made long enough to allow of easy access to all parts of the peritoneal cavity. In two of the cases of adults in which the length of the incision is mentioned it was five inches, in the right linea semilunaris; in both cases the trouble had proceeded from the vermiform appendix. The coils of small intestine, beginning with those that are most damaged, are quickly drawn out through the incision and covered with warm gauze or towels. The peritoneal cavity is then thoroughly and systematically wiped with large pledgets of gauze wrung out of a hot solution of salt, particular attention being paid to the pelvic portion. In some cases, says Dr. Finney, it may be well to flush the cavity with a warm solution of salt in addition, but this, he thinks, is rarely necessary. Then the small intestine, still lying outside the abdomen, is very thoroughly examined loop by loop and rendered macroscopically clean by being wiped with gauze compresses wrung out of a hot solution of salt. At times, says Dr. Finney, it is necessary to wipe them with considerable force, in order to remove adherent flakes of partly organized lymph, and on the thorough and conscientious manner in which this is done depends the success of the operation in great measure. This cleansing process is facilitated if it is carried on under a constant irrigation with a warm solution of salt, and this also lessens the shock.

After the intestine has thus been cleansed, it is to be replaced in the abdomen, the coil that is in the worst condition or one that has been sutured being returned last, so that it will be left the most superficial and therefore the better drained by gauze packed about it, if necessary. Then the abdominal wound is closed tight, just enough room for the gauze drain being left between two sutures. If there is evidence of abdominal distention or pain, the Paquelin cautery should be applied to the abdomen thoroughly (but superficially, we presume), and the bowels moved early by means of calomel given in fractional doses and followed by salts and an enema of oil of turpentine.

Dr. Finney does not maintain that this procedure will cure every case of general suppurative peritonitis, but he believes that it will prove more efficient than any other with which we are familiar. As with all methods, it is essential to success that the operation should be performed within a few hours after the perforation has taken place. Of the patients whose cases are briefly narrated, one was a man, forty-seven years old, who was operated on about fourteen hours after the first manifestations of perforation, on about the eighth day of a mild attack of typhoid fever; another was a lad of twenty years with perforation and gangrene of the vermiform appendix and diffuse suppuration; the third was a man, thirty-three years old, with similar trouble and in profound collapse; the fourth was a boy, ten years old, who had received a blow of the fist upon the abdomen which had been followed in a few days by the formation of a large collection of pus, not walled off from the general peritoneal cavity, behind the cæcum, containing the diseased appendix; and the fifth was a boy, nine years old, with perforation and gangrene of the vermiform appendix and a sero-purulent fluid and some gas diffused in the abdominal cavity. The case to which the appended note refers is thus described:

"The patient, a young woman, was *in extremis* at the time of the operation, which was undertaken simply as a forlorn hope. This operation was secondary to one performed several days previously by another surgeon for appendicular abscess. There was found present a general peritonitis, with much plastic lymph covering the greatly distended and adherent coils of intestine. There was very little purulent fluid in the abdomen. Her pulse was very rapid and thready, and her temperature had risen several degrees. After the operation she was placed in a continuous bath, which added greatly to her comfort. The operation seemed to prolong her life, as she lived about thirty-six hours following it."

INJECTIONS OF ARTIFICIAL SERUM AS A MEANS OF PREVENTING DEATH AFTER SEVERE BURNS.

Professor Tommasoli, of Palermo, contributes an important article to the *Monatshefte für praktische Dermatologie* for July 15th. After mentioning the good results of serum treatment in certain skin diseases which he regards as due to chronic infectious poisoning or to self-intoxication, he reports two cases of severe burns in which the treatment was resorted to. The first case was that of a woman, sixty years old, who was admitted into the department for incurables of the hospital on December 2, 1896, suffering with scalds of the first, second, and third degrees. Almost two thirds of the front of the body, from the face to the lower limbs, was badly damaged. On the 4th the patient seemed threatened with speedy death; diarrhœa and delirium had already set in. It was now that the author asked to have her transferred to his department, and he resolved to try subcutaneous injections of the usual form of artificial serum containing sodium chloride and sodium bicarbonate. The first injection, of about ten ounces, was given on the 10th. On the 11th about a quart was injected, divided into two portions. On the 12th the same amount was given in one injection, and the patient was kept immersed in a bath all day. On the 13th a quart of serum was given in two injections. Toward evening on the 14th the patient died, after a vain endeavor had been made to inject the serum into a vein.

This first trial, then, was unsuccessful, but Tommasoli looked upon the case as having been not without value, for he had learned from it that a person severely burned bore the injections very well, and he had observed that after each injection the severest symptoms had abated and the patient been rendered quiet for several hours. He concluded that, if the treatment had been begun earlier and associated with the use of antiseptics and local sedatives, more could have been accomplished than transitory improvement.

On the 12th of March a second patient with extensive burns was brought to his clinic. He began with the new treatment at once, and the result was a brilliant fulfillment of his expectations. The patient, a lad twenty years old, had burns of the first, second, and third degrees affecting almost the whole of the right side of the chest, the right axilla, the anterior, inner, and posterior aspects of the right arm, the upper third of the forearm and the hand of the same side, almost the entire back from the shoulders to the buttocks, and nearly the whole of the right buttock. On the day of the patient's entrance only a dressing of Carron oil was applied. On the following day, March 13th, an injection of about eight ounces of artificial serum was given; on the 14th, one of about ten ounces, and on the 15th, one of about thirteen ounces. At this time the patient took a bath. On the 16th local treatment with iodoform was begun, but it had to be given up in a few days, owing to symptoms of poisoning. On the 17th another injection of about thirteen ounces was given; on the 18th, one of about sixteen ounces; and so on until the 6th of April. During the whole of this time the patient was in tolerably good condition, although tormented with pain, and then he improved rapidly, so that early in April he considered himself well in so far as his general health was concerned, and the very extensive burned surface had assumed a favorable appearance. On the 3d of May the patient left the clinic, although it was still to be desired that skin-grafting should be practised.

As regards the experiments on animals, a full account of them is to be given by Dr. Azzarello at some future time, but Tommasoli mentions some of their features. An experiment of Klebs's was almost exactly repeated on rabbits and dogs. The hind legs of these animals were scalded in water heated gradually to 158° F., and all of them that were not subjected to this treatment died in from thirty-eight to forty-eight hours. On six rabbits, of the same hairiness and weight as the check animals, injections of about two ounces of artificial serum were practised immediately after the scalding. Of these six, two survived and four died within the first twenty-four hours. It is worthy of note, says Tommasoli, that in the four dead rabbits the fluid injected was found still in the meshes of the tissue, in the form of an infiltration. In dogs the results were better; out of ten to which daily injections of from five to six ounces of serum were administered, only two died, and in a few hours after the scalding. All the check animals died within two days. But this is not all, says Tommasoli. The blood of the scalded dogs that had not had serum injections, taken before they died, also an extract made from their flesh, when inoculated upon healthy dogs in quantity proportionate to their weight, killed them; but two dogs thus inoculated and then treated with serum injections survived.

MINOR PARAGRAPHS.

BRIZIO'S ALGOMETER.

This instrument is described (*Gazzetta medica di Torino*, 1896, No. 34; *Centralblatt für innere Medicin*, July 17, 1897) as consisting of three parts: an upper glass tube filled with mercury, a large tube beneath, and a third glass tube playing within the second one and carrying a needle at its lower end. In using the instrument, mercury is allowed to flow from the first tube into the third, driving the needle into the patient's skin. There are scales for marking the extent of descent of the third tube in millimetres, the weight of mercury employed, and the time occupied in the experiment.

THE SALICYLATES IN THE TREATMENT OF NURSING WOMEN.

Professor S. Remy, of Nancy, says the *Journal de médecine de Paris* for July 18th, seems to have settled in the negative the question of whether or not the administration of sodium salicylate to a nursing woman is injurious to the child. A woman who had shortly before been confined, and was nursing her baby, was suddenly seized with acute rheumatism. Sodium salicylate was prescribed in daily amounts of thirty grains. Its favorable action on the rheumatism was soon manifested, and no harm was done to the nursling. The mother's lochia cruenta were more abundant than usual, and this was attributed to the salicylate; but the flow was controlled with hot vaginal injections, so that it did not interfere with the continued use of the drug.

THEATRE SICKNESS.

Under the name of *mal de théâtre*, we find in the *Progrès médical* for July 17th an account of an affection often witnessed by physicians in theatres, according to the writer. It is manifested by loss of consciousness, faintness, and even syncope. It generally occurs in persons who have dined hastily in a restaurant and reached the theatre overheated. Pregnant young women are particularly disposed to it. The only treatment required is to loosen the clothing, lay the patient down, expose the face to fresh air, bathe the temples with a little cold water or cologne, and apply smelling-salts. The patient should not be allowed to stand or sit up until the attack is thoroughly over, that is, for ten or fifteen minutes, and then he had better not remain for the rest of the performance, but go home.

CHRONIC DIFFUSE MASTITIS.

Poujol (*Archives de médecine expérimentale*, May, 1897; *Gazette hebdomadaire de médecine et de chirurgie*, July 18, 1897) reports a case of chronic diffuse mastitis, which disease, he remarks, is characterized by the formation of peculiar nodosities, sometimes small and very numerous, sometimes larger and in smaller number. The principal lesion is dilatation of the galactophorous tubules, and it seems to be due to a degenerative change in the epithelium leading to the production of casts in the interior of the tubes. There is also thickening of the fibrous sheaths, with the formation of scattered points of inflammation. The old fibrous tissue tends to disappear by fatty transformation. The name diffuse mastitis, says Poujol, is too comprehensive, for the lesion is of the milk ducts only.

CLIMATIC TREATMENT WITHOUT INTERRUPTION OF STUDY.

Unfortunately, it is not a rare occurrence for a young man who has not yet finished his university course to find his health impaired by pulmonary disease of a form likely to be held in abeyance, if not overcome, by a sojourn in a proper climatic resort. Such a region is the plateau of New Mexico. We are glad to learn, therefore, by a circular issued by the president of the University of New Mexico, in Albuquerque, that the university invites correspondence from such young men and will make efforts to enable them to continue their studies under competent instruction and intelligent hygienic advice. At the same time, the president advises persons with pronounced lung trouble not to undertake serious school work.

A TRANSVERSE UTERINE INCISION IN THE CÆSAREAN OPERATION.

Fritsch (*Centralblatt für Gynäkologie*, 1897, No. 20; *Gazette hebdomadaire de médecine et de chirurgie*, July

25, 1897) has employed such an incision in one case, and thinks it ought to be adopted in all cases, inasmuch as it has the following advantages: As the abdominal incision can be made at a higher point, there is less danger of the formation of a hernia; the hæmorrhage is reduced to the minimum and the bleeding is external, so that the cleansing of the peritonæum is much simplified; the detachment of the placenta and the extraction of the child are very easy; suture of the transverse cut necessarily includes the divided vessels; the wound is insignificant when the sutures have been tied.

THE TOXICITY OF THE PERSPIRATION.

At a recent meeting of the Paris Academy of Sciences (*Indépendance médicale,* July 28, 1897) M. Chauveau submitted a note from M. Arloing on the poisonous quality of human perspiration. According to Arloing, human perspiration, injected into an animal, rapidly causes depression and leads to death within thirty-six hours. But it is only the sweat induced by muscular exertion that is poisonous; that brought out by heat is harmless. M. Berthelot stated that in certain old books he had seen a receipt for poisoning arrows with the sweat of the horse's axilla. Probably, he added, M. Arloing would find horse's sweat particularly charged with toxines.

MAIZE MACARONI.

Dr. Angelo Celli, of Rome (*Giornale della Reale società italiana d'igiene,* June 30, 1897; *Indépendance médicale,* July 28, 1897), has sought to ameliorate the diet of a great number of the Italian peasants who now subsist chiefly on maize in the form of polenta. He believes that maize meal made into macaroni would be more readily digested and less apt to give rise to pellagra.

ACETONURIA AS A SIGN OF DEATH OF THE FŒTUS.

Knapp (*Centralblatt für Gynäkologie,* 1897, No. 16; *Annales des maladies des organes génito-urinaires,* July, 1897) has found more or less pronounced acetonuria in pregnant and parturient women whose gestation has subsequently ended in the birth of a dead child. In half the cases the women were syphilitic, but, if the fœtus survived, the mother's urine contained no acetone; hence Knapp thinks that acetonuria in a pregnant woman is a sure sign of the death of the fœtus.

SUPPURATIVE INGUINAL ADENITIS WITH GONOCOCCI.

Hansteen (*Archiv für Dermatologie und Syphilis,* xxxviii; *Annales des maladies des organes génito-urinaires,* July, 1897) reports three cases of suppurating inguinal glands accompanying gonorrhœa in which a bacteriological examination of the pus showed the presence of gonococci in it. In one case, in which the abscess was opened with a bistoury, sowing the pus gave rise to a pure culture of typical gonococci which, on being placed in the urethra of a healthy man, set up a characteristic gonorrhœa. In the two other cases, in which the abscesses opened spontaneously, examination of the pus from the fistulous tract showed the presence of gonococci and streptococci. An attempt to cultivate the cocci on Wertheim's medium, made in one of these cases, failed.

CHONDROMA OF THE CALCANEUM.

At a recent meeting of the Paris Anatomical Society (*Presse médicale,* July 24th) M. Barusby reported a case of pure chondroma of the calcaneum in a woman fifty-six years old. The tumor affected the posterior part of the calcaneum, was developed in less than three months, and was accompanied with very severe pain. The size of the growth is not stated.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 10, 1897:

DISEASES.	Week ending Aug. 3.		Week ending Aug. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	27	12	53	6
Scarlet fever	78	6	78	4
Cerebro-spinal meningitis	1	0	0	0
Measles	96	8	87	3
Diphtheria	136	21	167	29
Croup	2	1	4	0
Tuberculosis	236	94	268	120

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon-general during the week ending August 7, 1897:

	Small-pox—Foreign.		
Glasgow, Scotland	July 10–17	3 cases.	
Madras, India	June 12–July 2		3 deaths.
Rio de Janeiro, Brazil	June 19–July 3	6 "	
Calcutta, India	June 19–26		3 "
Bombay, India	June 31–July 6		4 "
Montreal, Canada	July 2–26	5 "	3 "
Singapore, India	May 1–31.		4 "
Pernambuco, Brazil	May 29–June 26		12 "
Warsaw, Russia	July 3–17		5 "
Sagua la Grande, Cuba	July 10–24	112 "	
Cienfuegos, Cuba	July 18–25		13 "
Odessa, Russia	July 10–17	1 case.	
St. Petersburg, Russia	July 10–17	6 cases.	
Para, Brazil	July 3–17	40 "	2 "
Athens, Greece	June 1–30	14 "	1 death.
Gibraltar	July 11–18	1 case.	
	Cholera.		
Madras, India	June 12–July 2		4 deaths.
Calcutta, India	June 19–26		57 "
Bombay, India	June 31–July 6		15 "
	Yellow Fever.		
Rio de Janeiro, Brazil	June 19–July 3	5 cases,	4 deaths.
Santiago de Cuba	July 17–24		23 "
Panama, U. S. of Col.	July 13–23	5 "	3 "
Sagua la Grande, Cuba	July 10–24	74 "	
Manzanillo, Cuba	July 1–15		4 "
Para, Brazil	July 3–17		8 "
	Plague.		
Bombay, India	June 31–July 6		7 deaths.

Medical Schools in Denver.—The Supreme Court of the State of Colorado has forbidden the University of Colorado from carrying on any part of its medical department in Denver, because the constitution locates the university itself in Boulder. In consequence of this the members of the faculty resident in Denver have resigned, and the larger portion of them have united with the Medical Department of the University of Denver. Among those who have thus strengthened the Denver Medical School are Dr. H. T. Pershing in diseases of the mind and nervous system, Dr. S. G. Bonney and Dr. H. B. Whitney in medicine, Dr. Charles A. Powers in surgery, Dr. Walter A. Jayne in gynæcology, Dr. George B. Packard in orthopædics, Dr. L.

E Lemen and Dr J. W. O'Connor in clinical surgery, Dr. T. E Taylor in clinical obstetrics, and Dr. John Chase in clinical ophthalmology. The faculty of the school has been further enlarged by the election of Dr. P. V. Carlin in obstetrics, Dr. W. H. Bergtold and Dr W. B. Fenn in pathology, and Dr. Carroll E. Edson in therapeutics.

The Medico-chirurgical Hospital, of Philadelphia, has been granted, by the State of Pennsylvania, an appropriation amounting to the sum of one hundred and twenty thousand dollars.

Change of Address.—Dr. Bransford Lewis, to suite 627 Century Building, corner of Ninth and Olive Streets, St. Louis.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 1 to August 7, 1897:*

BANISTER, WILLIAM B., Captain and Assistant Surgeon, is relieved from duty at Fort Crook, Nebraska, and ordered to Fort Keogh, Montana, for duty.

BROWN, PAUL R., Major and Surgeon. The order directing him to report for duty at Fort Keogh, Montana, is revoked upon his being relieved from duty at Fort Hamilton, N. Y. Major Brown, having been found by an army retiring board permanently incapacitated for active service, will proceed to his home and await retirement.

WOODHULL, ALFRED A., Lieutenant Colonel and Deputy Surgeon General, is granted leave of absence for one month and ten days, to take effect on or about August 20th.

Births, Marriages, and Deaths.

Married.

BENEDICT—GOLAY.—In Brewer, Maine, on Wednesday, July 28th, Dr. Francis Benedict, of Middletown, Connecticut, and Miss Cornelia Golay.

DICKSON—MORRIS.—In Rochester, N. Y., on Tuesday, August 3d, Mr. Thomas H. Dickson and Miss Fannie Morris, daughter of Dr. S. H. Morris.

MARTIN—GERNAUD.—In St. Martinville, Louisiana, on Wednesday, July 28th, Dr. Joseph S. Martin and Miss Aimée Gernaud.

RYMER—WILBUR.—In Honeoye, N. Y., on Thursday, August 5th, Mr. George H. Rymer and Miss Maude Wilbur, daughter of Dr. Leonidas F. Wilbur.

Died.

BIRDSALL.—In Glen Lake, N. J., on Sunday, August 8th, Dr. Asahel H. Birdsall, of Brooklyn.

KROG.—In New York, on Tuesday, August 10th, Dr. Albert F. Krog.

Letters to the Editor.

THE ABUSE OF MEDICAL CHARITY.

NEW YORK, *July 30, 1897.*

To the Editor of the New York Medical Journal:

SIR: At the risk of being considered tedious I venture to add my contribution to the considerable literature, which is daily accumulating, with respect to hospital and dispensary abuse. The matter is indeed a serious one when it interferes, as I believe it does, with the possibility of earning a bare living on the part of no small number of reputable physicians. The facts at issue, which have been reiterated in editorials, phillipics, and discussions of greater or less warmth, are but too well known, including the tendency in our city and in many other cities to multiply the public means of relieving suffering far beyond the requirements of the suffering poor, the construction of hospitals of such beauty and attractiveness with such wide-open doors and such competent professional attendants that hundreds take advantage of them who could and should pay, at their homes, for the services of a physician, and the development in our multitudinous clinics and schools of instruction of a vast host of the sick and injured from whom the frequent exhibition of themselves and their deformities calls out no feeling of offended modesty, and with whom the idea becomes gradually obliterated, if it ever existed, that services rendered by a physician have a just money equivalent the same as skilled services rendered by persons of any other profession or trade. This willingness and desire to obtain something, and a great deal of it, for nothing, on the part of so many who are quite able to return *quid pro quo,* is debauchery and demoralization, or I know not what to call it. The deserving poor are by no means included in this category; it is a pleasure to every honest man to serve and help them. Who is responsible for this evil state of affairs, this lowered moral tone? The doctors themselves mainly, and it is reacting upon some of them, not always the guilty ones; some of them it is crushing.

We ought not to forget in our eagerness to develop great institutions and satisfy personal ambition the reciprocal relations which should exist between the different members of the profession. The teachings of medical ethics are not at fault if such relations are ignored; the prevalent selfishness is not due to the teachings of medical science or to the precepts of the fathers.

What is the immediate prospect? A number of medical cliques, rings, machines, and corporations with limits as narrow as possible and grasp insatiable, some of them parading under the mask of charity and seeking to impose upon the public with that plea, some of them powerful forces in medical politics, and some of them performing really excellent work and rendering valuable service along broad educational lines.

Hospitals and dispensaries, most of which are sustained with public money, are made tributary to them and become training schools, many of them, for the limited number who gain their favor.

In our more elegant hospitals patients are constantly being received, medical services being gratuitous, at an expense to the patient greater than would be incurred if he remained at home, receiving equally good professional care, such care being properly paid for. The visiting surgeons and physicians of the hospitals in question usually make no complaint of this system of imposition upon them, for not only would their official heads be endangered, but private rooms are often a great convenience for patients who are quite willing to pay the doctor his fee in addition to the hospital bill. Besides, the free patients who have money, or their friends, will sooner or later find their way to the doctor's consulting room, and he will be the gainer in the end.

The city doctor ought no longer to expect the monopoly of the practice which brings substantial returns; medical knowledge and skill are none too much diffused among us for that. The country doctor is in many cases as well equipped as his city *confrère*, and it is an insignificant place indeed which can not furnish hospital accommodations to those who really require them.

The foregoing statements are plain and trite, but they do not lose force by repetition. The blinding effect of ambition, as to the rights of others, is not forgotten, nor the tendency and the right of leaders in every calling to assume leadership, nor the pains and complaints of the disappointed, but with due allowance for all these there is still in the profession at the present time, more than ever before in my opinion, a painful lack of *esprit de corps*, a deficiency in cohesion and in comity, and there is a consequent enormous resulting loss in effectiveness. Andrew F. Currier, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of May 12, 1897.

The President, Dr. Brooks H. Wells, in the Chair.

Apparatus in Lieu of Clover's Crutch.—Dr. E. Pierre Mallett presented an apparatus to take the place of Clover's crutch in operative work requiring the dorsal position. It consisted of three pieces: a large pair of strong canvas or duck stockings, with straps on either sides like boot straps, and a band two yards long and about three inches wide, made of the same material. At either end of the band was attached a small hook, while for a distance of about a foot from either end were a dozen or more small holes at equal distances apart. The stockings were put upon the patient; the hook at one end of the long band was passed through the straps of one stocking and made fast in one of the small holes. The other end of the band was passed under one shoulder of the patient and over the other. The hook at this end was then passed through the straps of the other stocking and made fast, flexing the thighs upon the abdomen. The surplus portion of the band was then passed over to the other stocking, so as to keep the legs from falling too far apart, and to steady them. He said that it was a modification of Hunter Robb's device with the addition of the stockings. The Clover crutch was efficient, but had disadvantages: it caused pain and soreness in the popliteal spaces, and was heavy and inconvenient to carry. The iron upright supports of Edebohls's were also heavy, inconvenient to carry, and expensive. The advantages he alleged for this apparatus were: 1, that it maintained the limbs in the proper position without pressure in the popliteal spaces or chafing at any point; 2, that, other things being equal, it was better to have the limbs and feet of the patient kept warm and dry in these aseptic stockings, than cold and clammy in wet bichloride towels; 3, it was simple, could be easily and quickly adjusted, took up very little room in the operating bag, could be made by any nurse at trifling cost, and could be washed after each operation.

Tumor of the Spine.—Dr. Walter E. Cladek presented a specimen and report of a case of this kind. (See page 205.)

Dr. Adolph Rupp asked whether the bedsore was due to pressure and bad general nutrition, or whether it had developed from causes of a different character. With reference to the use of iodide of potassium for diagnostic and therapeutical purposes, he called attention to the fact, and narrated a case in illustration, that iodide of potassium alone, even in large doses, would not in all cases settle the question of syphilis. Mercurial inunctions would help when the iodides administered alone had failed.

Dr. R. C. Newton said that it seemed extremely probable that if the growth had been cut down upon early in the disease the man's life might have been prolonged, if not saved. The diagnosis had been very obscure, and the previous speaker had not succeeded in getting a diagnosis until a few days before the man's death. It was by no means settled whether spinal growths were, as a rule, operable or not. He had operated once for fracture of a vertebra, and, while the man had died quite promptly, he would have died in any case, and by an operation he had probably been saved a great deal of suffering. The speaker asked if in the case reported there was any priapism.

Dr. Cladek, said that the bedsore had not developed until the symptoms of pressure had appeared, about three weeks and a half before his death. He could take very little nourishment; everything burned his stomach; if he tried to take any amount of nourishment or drink he would vomit. The case had been altogether inoperable; the tumor had not been of a cord, but of the dura. The man had had no symptoms referable to the spine until about a month before his death, excepting the reflex pains which were in different parts of the body. He had not been troubled with priapism whatever; in fact, there had been a complete loss of all sexual desire.

Exudative Chorioiditis.—Dr. H. S. Oppenheimer presented a case of this kind, especially because it was rather of a foil to a patient he had had before the society some months ago, who had had an exudation of both eyes, and the diagnosis had been glioma of the retina. In the case presented this evening it was difficult to get a correct history, because the mother could hardly make herself understood. Last January the boy had been sick abed about four weeks, had had little or no appetite, had been constipated, and three or four nights he would "yell out continually," as she put it. Part of the time during his sickness he had had a stiff neck, the head thrown back, the feet and arms stiff or lamed. About the first week of his trouble the boy's left eye had begun to swell and had stood out, but gradually this swelling had subsided. As he became convalescent swelling had appeared in his feet and hands. The physician who treated him had made a diagnosis of nephritis. The boy was a little hard of hearing; there was some difficulty in making him understand; he did not answer at all. He seemed to be rather dull and sat quiet without playing, as children of his age (four years) would ordinarily do. The parents were healthy people; they had six healthy children, and besides, had lost two shortly after birth. The speaker thought it a case of exudative chorioiditis, caused probably by the inflammation following the veins from the brain. The boy had evidently had meningitis, whether of the cerebro-spinal variety or not he could not say. There was probably not only chorioiditis, but a little cellulitis from the infiltration into the orbit of purulent matter. The appearance of the eye was exactly as in glioma; there was a yellow reflex, an exudation which involved the chorioid, which often filled up the vitreous, and in the most severe cases went on to perforation at the sclera and conjunctiva. Often in cases like this there was interference with the nutrition of the lens, and the lens eventually became opaque and calcareous. The pupil in the case presented was bound down; the speaker had not been able to dilate it. There was no sign of trouble in the middle ear, and there was distinct difficulty in hearing, more marked in one ear than the other. There may have been nephritis, and there probably had been the meningitis besides. The right eye was perfectly normal.

Dr. Walter B. Johnson said that these cases of exudative chorioiditis, whether dependent upon meningeal inflammation or not, were exceedingly rare. He spoke of two cases he had seen, one of which had been fully as extensive as the case presented and followed what he believed to be an attack of cerebro-spinal meningitis. The history had not been positive, and the physician who had attended the case had told the mother that the child had brain fever. Another case had been the result of injury, a blow upon the eye, which he had not seen until a considerable period after, and which had contained a mass confined pretty much to the temporal half of the eyeball, giving the same kind of reflex, rather more yellowish than in the case presented. Of course, in these cases there was nothing to do; and unless the exudate had been so extensive that the eyeball underwent rupture atrophy had not resulted. In the cases where rupture had occurred, atrophy was almost sure to follow.

Dr. Oppenheimer said that he did not think there was any danger to the child's life. Of course, the sight of the eye was hopelessly destroyed. The eye was soft to the touch, whereas in glioma it would be apt to be hard. There were no traces of new vessels, whereas in glioma we could frequently trace a new vessel in the growth. It was a very difficult eye to see; the pupil was bound down and did not yield to very strong solutions of atropine.

Two Cases of Pregnancy following Ventrofixation of the Uterus.—Dr. A. M. Newman read a paper on this subject. (See page 205.)

Dr. D. E. Walker said that the point Dr. Newman mentioned in regard to the technique of the operation in these cases was the fixation of the fundus, and that the operation to be properly done should include the anterior surface of the uterus and not the fundus, leaving the fundus room to enlarge. Some of these operations were said to include not only the fundus but a portion of the posterior wall. That would give the posterior wall most of the work to do, and would bind the uterus down, as it was sometimes bound down in the retro-reflexed position by the sacrum, causing abortions.

The President said that the whole thing lay in the technique. At first it was thought necessary to fasten the uterus very firmly forward, and many of the earlier operators had used buried stitches of silver wire, silkworm gut, or other permanent material that were passed deeply through the posterior wall of the fundus, and then through the muscles and fascia; of the large number of cases of dystocia which had been reported, nearly every one had happened in a case where one of these old methods of fixation of the uterus had been used. A more modern method was to use two stitches of chromicized gut or kangaroo tendon which should include the peritonæum at the fundus and at the lower angle of the abdominal wound. This would hold the two peritoneal surfaces together and allow the formation of sufficient adhesion. At first the fundus was held closely to the under surface of the abdominal wall, and the patients might complain of some dragging, but this soon disappeared, and the fundus dropped back a little to the normal position. He had operated in this way in over thirty of these cases, and the result in all had been very satisfactory. Two of these patients were now pregnant eight months, and so far had shown no abnormal symptoms.

Dr. Newman said that in one case he had used heavy catgut, but it had lasted only fourteen days, when the uterus had dropped back. He had been in hopes that adhesions sufficiently strong to hold the uterus forward would occur before the catgut was absorbed.

The Abuse of Medical Charities.—Dr. J. B. Huber read a paper on this subject. (See page 207.)

Dr. Johnson said he did not think it a good thing to look entirely upon one side of questions of this kind, either from the side of bread and butter or from the side of no bread and butter. The charities of the city of New York, while they suffered continued abuse, were still noble institutions, deserving of the support they received, and which was necessary to their existence. He believed that a movement of the kind suggested in the paper just read would be a good thing, provided it was distinctly set forth as an effort to correct only the abuse. It was the abuse of charity that caused the injury, not the use. He did not think there was any class of men in the world prepared to devote the amount of time and service to charity in the care of institutions that medical men were, and he believed that they would for years to come continue the good work in this direction. He hoped an improvement would be made in the matter of abuses, that those who were not entitled to charitable services would be weeded out, but he hoped also that the efforts physicians made would not in any way interfere with the advance of the great charitable institutions themselves. These charitable institutions were dependent largely upon the gifts of benevolent people; these people gave to the hospital with the idea of assisting the poor, and the doctors gave their services for the same reason, and they must not make any effort which would reflect upon the institutions because some undeserving persons at times received benefits. He had heard people object to giving to charitable institutions because the charity had been abused. After all efforts had been used, there would still be a certain amount of abuse of charity. The use, however, accomplished so much for suffering humanity that the evil must be borne.

Dr. A. Rupp said that the abuse of medical charities was not characteristic of our own country alone, but was common in Europe and in all Christian communities. How to correct these abuses awaited settlement. He did not think that medical men were alone to blame. The evil had three sources: in the philanthropists, the public, and the medical profession. Medical charities were free to all, and so long as this was the case, and so long as people in general would be ready to lay hold of what they had not earned, medical charities would continue to be abused. The doctor in attendance at any clinic in a dispensary could not well be expected to sift the worthy from the unworthy; his time was short, and he had too much else to do to get through with the work before him. However, the doctor could help to correct charity abuses, the philanthropist must help, and the better moral nature of the public must be appealed to. In order to add interest to the present discussion he had, as one of the science committee, asked the president of the New York Medical League, Dr. J. J. Noll, to come to this meeting, and if the members were willing, Dr. Noll would say something concerning the objects and methods of the society he represented.

Dr. Joseph Noll said that the city was paying for the maintenance of a maternity service in Charity Hospital. Since the institution of the Sloane Hospital the attendance at the Charity service had fallen off fifty per cent. The Sloane Maternity Hospital got eight thousand dollars from the city, which, with the money that they received from benefactors, averaged eight dollars for each case to the credit of the Sloane Maternity Hospital. The New York Hospital last year issued a report that from their one-dollar-a-month service the sum realized was a hundred thousand dollars. The league proposed, if necessary, to go into politics. It wanted to have the charities absolutely free. The history of a hospital was this: an ambitious physician, a clergyman, a congregation, and the public treasury. The New York Hospital proposed to raise a four-story extension for the treatment of patients at one dollar a month. This thing was going on *ad infinitum.* Mount Sinai Hospital had started by asking forty cents a head for all their charity cases. How long would it be before all the hospitals would be following this example?

Dr. Henry H. Schroeder said he had happened to hear that day of a physician who had a practice which had formerly paid him about five thousand dollars a year, which he had had to give up, as he could not pay his expenses any longer. He was a genito-urinary specialist, and when asked why he had to give up, said that the New York Hospital was open certain evenings in the week, so that the men earning a living could go there at night, and that reduced his income considerably. The speaker had not much faith in the righting of this question, and thought the whole thing lay with the physicians themselves. There was not a set of people in the world among whom there was less *esprit de corps* than among physicians. In the dispensaries one often treated patients whose husbands received good salaries—anywhere from twenty-five to fifty dollars a week. One summer he had taken a class in the Vanderbilt Clinic, where he had worked from two to six o'clock throughout the hot weather for patients many of whom, by their general appearance, would have done him credit if they had come to his office. He had suggested to the authorities that the institution could at least afford to pay the salary of one man whose only duty would be to take a list of the patients who came, with their addresses, and, as far as he was able, to call upon them. Of course, he could not call upon them all, but he could visit a great many, and those whom he found misrepresenting as to their ability to pay he could put on the black list. It would soon get around among the patients who came there, and they would be very apt to stay away unless really deserving of charity. It was hardly necessary to say that the suggestion was not adopted.

Dr. John H. Coughlin said that he did not think the remedy should come from the doctors themselves, but from the legislature. He thought there should be a bill making misrepresentation a crime punishable with fine or imprisonment. The people who came to the dispensary often owned houses in the neighborhood.

Dr. George H. Mallett believed that the doctors were to blame in a great many instances, for almost every man who had had a clinic had had a number of patients coming from doctors, asking for diagnosis. He had always made it a rule never to tell a patient in a clinic what was the matter with her unless an operation was urged, and then, of course, she had a right to know her condition. The gentlemen who had spoken were absolutely right in regard to the institutions being put on an entirely free basis, and patients should not be allowed to feel that they were paying for what they got by giving a dollar a month. The men who put up these institutions almost always went into it as a first-class investment, "for charity." They expected each institution to be self-supporting, and they usually were; and in many cases they accumulated wealth.

Dr. D. E. Walker said there was another light in which this question could be looked at that was as important as the bread-and-butter side, and that was as to how it affected the really worthy poor. The workman did not feel able to pay for medical treatment and attended a dispensary in the hope of being treated there. He very often lost his time, and perhaps his job, waiting for those who had plenty of time and could go early and stay late. Consequently, the abuse of this charity took from the poor often as much as from the physician. When he worked in the dispensary some six years ago he had an hour to give to the treatment of surgical cases, and very often he had so many to treat that he could not give them sufficient time to do them much good. Often where the time was more extensive than that, it was taken up by the rich paupers, and the poor who deserved treatment could not get it.

Dr. A. T. Muzzy said that in the discussion the views of the different speakers seemed to be affected somewhat by the kind of dispensary from which some of them had suffered. He had suffered also in another way. He was connected with a dispensary—a small one in Jersey City for the eye and ear—and had striven to keep the work down to the legitimate work. He was the only specialist; if any loss happened, it came against him, and he had felt this condition somewhat. He was met by the chairman of the hospital dispensary, who wanted to know why his classes were not larger, and said if the speaker made them more popular with the community he would have a great deal larger classes, and he must do it in order to get the support of the community. The chairman who made this statement was a leading clergyman of the city, and the speaker had told him that those who had a right were treated; they had been complained of by the saloon-keepers and by quite a number of the same character, and by two or three railroad men, but as far as the poor were concerned there was no complaint so far. Was the service desired as a revenue to the hospital or for the poor? He thought if physicians were careful they could do something; but, on the other hand, he was quite in sympathy with the gentleman who thought the relief must come from the legislature. Physicians who were connected with hospitals and dispensaries might find it a difficult thing to defend themselves from accusations of sordidness if they should press an attack on these people who sponged upon us and the community. Suppose it was made a crime for a man to come under a false pretense, who was going to look up that point of his falsity? Would he not immediately parry the thrust as he did now, by simply taking more care to hide his identity? And then, where would the blow fall? It would not fall on the guilty one, it most probably would fall on the poor physician. The accused would say, Why are you pressing this question so closely?

Dr. Ralph H. Pomeroy thought the root of the whole matter was the cant of the medical profession on the subject of charities. The medical profession could be divided into two classes, those who had hospital appointments and those who had not. If an effort was made to get both of these classes on common ground, they both wanted hospital appointments and they did not want to spend their time for charity; while, at the same time, they were willing that those in charge of hospitals should believe that was what they were working for. If they went into the work free from all hypocrisy and with a spirit of justice toward one another, they would have insisted long ago on every man being paid for the time he spent upon it. If every man insisted upon being paid, he believed that the matter would correct itself, just as any business situation would.

Dr. **Oppenheimer** said that he had risen to re-enforce the preceding speaker's statement. He believed it was greatly due to the carelessness of the medical profession. He had worked in dispensaries and hospitals for twenty-one years, and believed the medical profession was to blame for the whole matter. At any rate, they had the remedy in their own hands. Medical men who were treating a family and wanted a diagnosis of a special case and a special disease would send their patient in to get a diagnosis. Then, again, the dispensary doctors were often careless about looking into the financial condition of their patients and treated them, and thus took the bread out of their brother's mouth. About a month ago a patient of his, a lady from New Jersey, had told of a friend of hers who was not very well off and who went to a dispensary for treatment. She had a nervous trouble which would give her spasms and make her red in the face, looking as if she had been drinking. The doctor at the dispensary, thinking her drunk, said, "What are you coming here for?" in a rough way, and the woman went home crying. The speaker had advised the patient to send her to him, and she might pay whatever she could afford. She had come, and after he had examined her and told her what to do she wanted to know what she was to pay. The speaker told her his regular charges, and said she should pay what she could afford. The woman had given him five dollars, had come twice again, and each time had handed him five dollars. But for the accidental rudeness of the man at the dispensary the woman would have been treated free and never would have suspected that she was robbing the doctor. He thought that the patients who could pay a dollar or more must come a thousand a day to the different institutions. Men well established in the profession could get on, but for the young man it was a tremendous struggle before he could support himself. As to the remedy of the matter by a legislature, he thought it a disgrace to the profession that such a thing should be necessary, but he believed it was necessary. There was a law which had just gone through the senate and the assembly, and was before the governor for signature. The governor had promised to sign it as soon as he could get hold of a pen. It had been before him some time and he had not signed it yet. Pens seemed scarce in Albany.

Dr. **Noll** stated that it had been signed.

Dr. **Oppenheimer** said that this law provided for the supervision of these dispensaries; it put the execution of the law into the hands of the State Board of Charities, and it made it a misdemeanor for any one to come and procure treatment at an institution who was not in need of gratuitous services. That might help matters a little, but if every man considered his weaker brother, when a patient came to him who could afford to pay something, there would be no need of such laws.

Dr. **Rupp** said that Dr. Oppenheimer and some others who had spoken had demonstrated that doctors were their own enemies. He wished again to say that doctors were not alone to blame for the abuses which we all wished to see corrected. He also wished to call attention to an abuse which our commissioners of charities, politicians, apparently ashamed of the name they bore, had practised by expunging the name charity from one of our city hospitals. Why had they done it? To be charitable? Our form of civilization claimed credit for its charities, and at the present time and for ages back there was and had been nothing of evil in the virtue of charity. The socialist did not cry for charity; he wanted justice. In our present form of society he could get both. But the commissioners of charities had pandered to a dishonest sentiment by appearing to give to the needy charity without the name. Philanthropists were always charitable, sometimes in spite of themselves. We should not forget the three factors of these abuses: the philanthropists and the public, as well as the doctors.

Dr. **Huber** repeated the figures that he had quoted from Dr. Gray's address, that out of a population of 1,800,000 plus, 793,000 plus were treated free by the dispensaries. These figures, as the editor of the *Medical Record* said, were truly appalling, and he thought the matter should be attended to by the profession.

Miscellany.

The Antivenomous Properties of the Bile of Serpents and Other Animals.—In the *British Medical Journal* for July 17th there is a long and interesting article on this subject by Dr. Thomas B. Fraser in which he explains the insusceptibility of animals to the poisonous action of venom introduced into the stomach. If this venom, he says, is not rendered innocuous by the stomach secretions, but yet fails to cause poisoning, it may be assumed that the stomach walls are incapable of absorbing it. If, like other poisons, it can be absorbed from the intestines, the explanation of the failure to produce toxic symptoms when it is administered by the stomach might depend on a chemical or physiological destruction of its toxic properties by some substance which it encountered soon after entering the intestinal canal, and most probably, therefore, by the bile or the pancreatic secretion.

Regarding the settlement of this question, Dr. Fraser has made a number of experiments with the biliary secretion, and, he says, whatever may be the influence of the other secretions or of intestinal absorption, that of the bile has been found to be so decided as to be in itself sufficient to account for the innocuousness of the stomach administration of venom.

The bile from the gall bladder of the African cobra, puff-adder, rattlesnake, and grass-snake was used, and each bile was tested against the venom of the African and Indian cobra. The experiments were made by mixing together, and leaving in contact with each other for ten minutes, a dose of venom and a dose of bile, each substance having been dissolved in a few tenths of a cubic centimetre of water, and then injecting the mixture under the skin of the animal.

It was shown from these experiments that the bile of venomous serpents was able, when mixed with the venom of serpents, to prevent lethal doses of the latter from producing death; and that bile was indeed so powerful an agent in doing this that a quantity actually smaller than the quantity of venom might be sufficient for the purpose. In a similar manner, says the author, the bile of innocuous serpents and other animals was examined. All serpents, innocuous as well as venomous, exhibit a resistance against the toxic action of venoms introduced subcutaneously or directly into the circulation, which is not dependent on their being cold-blooded animals. Various facts, he continues, tend to show that the innocuous, equally with the venomous, serpents possess poison glands and secrete venom, but they are not furnished with weapons of defense in the form of poison fangs. Most probably, he thinks, the relative protection against the poisonous action of venom introduced into the circulation is dependent upon an effect produced upon them by the venom which they all secrete. Experiments made with the bile of the innocuous grass-snake, says Dr. Fraser, confirmed this supposition.

Experiments were also made with the bile of the ox, and it was found able to antagonize the toxic action of serpents' venom, its antagonizing power, however, being only about one seventieth of that of the strongest of the biles of venomous serpents which have been tested. It was shown by other experiments that the bile of the rabbit and of the guinea-pig also possesses this antivenomous property, and also in a degree which, though feeble when compared with the bile of venomous serpents, is yet in itself considerable.

While, therefore, continues Dr. Fraser, it may now be assumed that the bile of all animals is antivenomous, the difference observed between the potency of the bile of venomous serpents when contrasted with that of ordinary animals suggests that the antivenomous property must be dependent, at least in part, on some specific constituent or constituents present in different quantities in the bile of different animals. As this constituent is most largely present in the bile of venomous serpents, an endeavor was made to separate it from their bile.

The isolation of the antivenomous constituent, he continues, made it possible to obtain further and different evidence of the power of bile to render venom inert. Although the bile in its original form possesses much power in antagonizing venom when the two substances are mixed together *in vitro*, it can not be too distinctly stated—for the facts are also applicable to the antidotism between disease toxines and antitoxines—that these data are apt to give an exaggerated conception of the curative value of the antidote when it is administered after the venom. Generally speaking, he says, even when no more than the minimum lethal dose of venom is used, the quantity of the antidote required is from sixteen hundred to two thousand times greater in the latter than in the former condition of administration. Although, while in the alimentary canal, bile is non-toxic, it is altogether different when it is injected under the skin or into a blood-vessel. The bile salts and the bile pigments then act as poisons; and if a dose of bile was injected under the skin containing a sufficient quantity of the antivenomous constituent to antagonize a minimum lethal dose of venom received half an hour previously, the constituents of the bile which are non-antidotal, but at the same time toxic, might be so great in amount as to produce death. Thus, in an experiment made with African cobra bile, administered, in a dose estimated to be sufficient, thirty minutes after a minimum lethal dose of cobra venom had been injected subcutaneously, the animal survived for four days, whereas an animal used in a check experiment without bile died in six hours. During the two days before death, the animal which had received both bile and venom exhibited symptoms, however, which were rather those of bile than of venom poisoning. It is improbable, therefore, that the bile in its natural form could be used as an antidote except by stomach administration or by application to the wound caused by a snakebite.

Dr. Fraser states that the successful result of the attempt made to isolate its antidotal constituent has, however, rendered it possible to test the therapeutic value of this constituent when it is introduced into the blood of an animal which has already received a lethal dose of venom.

Thirty minutes after the animal had received by subcutaneous injection 0.0003 of a gramme to a kilogramme of Indian cobra venom, 0.012 of a gramme—equivalent to 0.075 of a gramme to a kilogramme—of the part, soluble in water, of the alcoholic precipitate of puff-adder's bile was injected under the skin of the other side of the body. Only slight symptoms of the action of the venom were manifested, consisting chiefly of loss of appetite and indisposition to go about; but they had completely disappeared at the end of twenty-four hours. The animal was kept under observation for a fortnight, and remained well to the end of this time. In a control experiment, a white rat of almost the same weight received subcutaneously a part of the same solution of cobra venom, representing also a dose of 0.0003 of a gramme to a kilogramme. Grave symptoms were produced in a few hours, and the animal was dead on the following day.

This experiment, continues the author, taken in conjunction with the considerable number of *in-vitro* experiments that have been made, not only supplies strong confirmation of the evidence given by those experiments that bile is able to render serpents' venom inert, but also suggests that from bile there may be produced an antidote for snake poisoning, which, in its antidotal value, will be at least equal to the most powerful antivenene or antivenomous serum yet obtained from the blood of immunized animals.

Thyreoid Treatment in Fractures with Retarded Consolidation.—Concerning this question of the influence of the thyreoid substance on the bony tissue, says M. Gauthier in the *Lyon médical* for June 27th, the most important aspect to be considered is the favorable action that thyreoid medication exercises on the troubles of nutrition in this tissue.

Bourneville, he says, ascertained that, under the influence of this treatment in infants showing myxœdematous idiocy, the stature increased in a proportion almost double that of natural growth. In these children the head also profited by the general development of the bony system, and nearly all the cranial diameters were increased; furthermore, dentition was very advantageously modified.

Hertoghe declares that the arrest and retardation of growth attributable to the thyreoid gland may be corrected, even at a comparatively advanced age, and he cites the case of a young man twenty-seven years of age as an illustration of this.

Schmidt also ascertained the reality of this promotion of growth by thyreoid treatment. Heubner verified the efficacy of thyreoid juice in rhachitis; and recently Maurice Springer and Serbanesco demonstrated that in myxœdema the cartilages of conjugation persisted for a long time without becoming ossified, and that the thyreoid treatment increased the stature until the age of thirty-four.

This persistence of the infantile condition and the renewal of growth agree well, says the author, with the fact recently pointed out by Vaquez—namely, the presence in myxœdematous persons of nucleated red globules which reveal the persistence of the fœtal processes of hæmatogenesis. There is nothing astonishing in this, because in myxœdematous persons the blood presents a sort of arrest of development. Poncet's operation, which is a surgical treatment for thyreoid insufficiency, gives identical and equally favorable results.

In the presence of these facts, says M. Gauthier, which are so convincing concerning the efficacy of the thyreoid treatment on the development of the bony tissue—facts which have been known for several years—it is astonishing that the idea of applying this treatment in the rather frequent cases of retarded consolidation in fractures has not been suggested sooner.

For a long time M. Gauthier felt that it was possible to employ this treatment with favorable results in such fractures, and during the course of his practice he had occasion to meet with two cases which were favorable to experiment with the thyreoid treatment. The histories of these cases are given in detail by M. Gauthier in the *Lyon médical* for July 11th.

The essential point in this treatment, he says, is to employ the fresh substance. Generally, the physician should get the thyreoid lobes himself, for, if it is trusted to a butcher, it will be found that the substance furnished is altogether different from the thyreoid lobes. The glands of young sheep are preferable, as tuberculosis is extremely rare in these animals. After the lobes have been properly taken from the animals and their useless tissues detached, they are administered unmixed with any other substance, provided the patient is at hand and the substance can be procured easily and often renewed. An ordinary capsule may contain forty-five grains. The lobes may be preserved quite a long time in salt water. If the patient, however, does not live near his physician, and can not be supplied with the fresh substance, it is best to use the glycerin extract, which is prepared by the author as follows: After the lobes have been weighed, finely cut, and pounded in a porcelain mortar, they are mixed with a quantity of glycerin equal to four times the weight of the lobes. This is allowed to stand for three or four days, during which time the mixture is triturated several times; then the liquid is filtered. This gives a one-in-five solution (one teaspoonful being equivalent to fifteen grains of the substance) which is transparent, of a slight rose tint, and sticky; it is not at all disagreeable in taste, and it may be kept for a long time in a cool place.

Serum Diagnosis.—The committee appointed by the chairman of the Section in the Practice of Medicine of the American Medical Association make the following summary of views expressed in a discussion on serum diagnosis which took place at the recent meeting:

1. In selecting the material used in making the test the choice between: *a*, serum, *b*, dried blood, *c*, fluid blood, and *d*, blister fluid, will depend largely upon whether the object is scientific research, clinical diagnosis in hospital or private practice, or public laboratory diagnosis where the samples have to be sent some distance.

2. In spite of considerable variation in technique, there has been a remarkable uniformity in the results obtained by those taking part in the discussion, and their average of about ninety-five per cent. of successes agrees with the general average of the cases, nearly four thousand, thus far recorded in medical literature.

3. Each of several methods of technique advocated may thus give good results in the hands of those thoroughly familiar with the details found necessary in each case and the sources of error to be avoided, success depending rather on being perfectly familiar with one method than on the particular one selected.

4. For routine diagnostic work even the very simplest methods may give good practical results, but for recording scientific observations those methods which are accurately quantitative should be selected. This is especially necessary in reporting exceptional cases at variance with the general results recorded or where the observations are made the basis of generalizations.

5. A complete reaction should comprise both characteristic clumping and total arrest of motion occurring within a definite time limit. For practical diagnostic work a dilution of one in ten, with a fifteen-minute time limit, is convenient. In any doubtful case the dilution should be carried as far as one in fifty, or perhaps one in sixty, and a reaction not obtainable at that point should not be regarded as perfectly conclusive. For these higher dilutions the time limit should be extended to two hours.

6. Intensity of reaction in a given serum should be estimated by determining the degree to which it may be diluted without losing its power of giving a decided reaction, both as to agglutination and loss of motion.

7. The intensity of reaction shown by the same serum is influenced by the age, condition, and virulence of the test culture and by the composition and reaction of the culture medium. For purposes of comparison the sensitiveness of the test culture should be taken into consideration.

8. The evidence so far recorded establishes that the reaction may be delayed or occasionally may not be obtained in cases of genuine typhoid infection; and also that it may be exceptionally present in non-typhoid cases, though not in an intense degree.

9. In investigating exceptional and contradictory results the following circumstances have to be considered: *a.* The uncertainty of clinical diagnosis. *b.* The absence of bacteriological or other confirmatory methods of diagnosis during life, giving decisive negative results. *c.* The possibility of overlooking typhoid infection even post mortem, in the absence of characteristic intestinal lesions where a very thorough bacteriological examination has not been carried out.

10. The modifying influences mentioned above suffice to explain the divergencies existing in the reports of different observers. Without being absolutely infallible the typhoid reaction appears to afford as accurate diagnostic results as can be obtained by any of the bacteriological methods at our disposal for the diagnosis of other diseases. It must certainly be regarded as the most constant and reliable sign of typhoid fever, if not an absolute test.

This summary, the committee say, while expressing the general consensus of opinion, does not purport to represent exactly the views of any individual who took part in the discussion.

Bilateral Resection of the Great Cervical Sympathetic in Exophthalmic Goitre.—The following case is related by M. Marchant in the *Gazette hebdomadaire de médecine et de chirurgie* for July 4th: In March, 1896, at the beginning of a pregnancy which terminated at seven months, the patient's eyes began to become prominent. In August of the same year a goître was discovered. Trembling appeared in January, 1897, and progressive emaciation was noticed, although the appetite had always been good. The patient was subject to diarrhœa from time to time, but it never became paroxysmal, as is frequently the case in exophthalmic goître.

On March 30, 1897, when the author examined her eyes, he was struck with the protrusion presented; it was so pronounced that the eyelids could not cover the ocular globe; the external and internal muscles of the eye were sound; the visual field was normal and the sight was intact; the pupils were very much dilated.

There was scarcely any tachycardia; the patient had never had paroxysmal attacks, palpitation, or dyspnœa. The apex of the heart was somewhat depressed and the organ seemed to be slightly hypertrophied. On auscultation, a presystolic murmur was heard and the first sound was prolonged.

The right lobe of the thyreoid gland was somewhat hypertrophied, the neck measuring thirty-four centimetres, but this goître was not of sufficient size to attract immediate attention; near the goître there was a vascular souffle. The trembling in the arms and legs was very marked.

No trophic troubles or troubles of sensibility and no hysterical stigmata existed, and the lungs, the digestive tract, and the kidneys appeared to be absolutely healthy. The author found that he had to deal with an abortive form of the disease characterized especially by the predominance of exophthalmia.

On the 5th of April the author practised the operation after etherization and the usual antiseptic precautions. He followed the operatory procedure indicated by M. Jonnesco in an article which appeared in the *Archives provinciales de chirurgie* at the beginning of the year. The cervical sympathetic was found by an incision which extended from the point of the mastoid apophysis to the external third of the clavicle; this incision enabled the author to pass behind the sterno-mastoid and to displace forward and inward the vasculonervous bundle of the neck, after having cut and ligated the external jugular vein and some nervous fibres of the superficial cervical plexus.

The sympathetic then appeared under the form of a rather thin white cord held by the prevertebral aponeurosis against the longus colli muscle; this nerve, however, was not easily recognized, for it was not possible to be sure that it was the sympathetic nerve until the upper cervical ganglion was exposed, that is, the fusiform enlargement, which is absolutely characteristic. Also, in order to avoid all hesitation and all disastrous cutting, a sharply prolonged incision toward the mastoid was made, which gave a sufficient opening for exposing the ganglion.

The operation on the left cervical sympathetic, which included resection of the lower part of the upper cervical ganglion with about four centimetres of the subjacent nervous trunk, lasted fifteen minutes; that on the right side lasted ten minutes, and the resection of the nerve was made in the same length of time.

It was observed that the middle cervical ganglion was not appreciable on either side. There was no modification of the pupils at the time of the operation; there were observed only small subconjunctival bloody effusions, which were very apparent and existed in the external segment of the right ocular globe only; these effusions appeared at the time of operation.

The two wounds were closed by buried deep sutures and superficial intradermic sutures which were designed to render the cicatrices less visible.

Immediately after the operation the pulsations were eighty, but there were no changes in the respiratory movements. The exophthalmia was diminished on the left side so that the eyelid almost completely covered the ocular globe. On the right side, however, the exophthalmia was yet very perceptible.

On the evening of the operation the patient's vaginal temperature was 99.7° F.; she was very quiet, and there were only sixty pulsations, which number remained almost constant until she left the hospital. On the following day there was a very perceptible diminution of the exophthalmia, of the pupillary dilatation, and of the vascular dilatation of the right frontal region. The patient complained of a slight pain near and behind the ears, also of a sensation of numbness, which was especially pronounced on the left side of the neck. This persisted during the following days and was due, M. Marchant thinks, to the section of several fibres of the superficial cervical plexus.

On the third day after the operation the exophthalmia diminished still more, and the patient could close her eyes completely. On the fourth day the dressing was removed and the two small drains were taken away. Nothing special was seen near the two lines of incision, but it seemed that the exophthalmia was more pronounced than it had been on the preceding days. The vascular dilatation on the right side still persisted.

On the 14th of April the patient left the hospital absolutely cured of the exophthalmia, of the pupillary dilatation, and of the venous turgescence which predominated in the right eye. The eyes seemed still somewhat prominent under the influence of emotion, but the patient said that they had always been so.

M. Marchant thinks that the immediate results of this operation were perfect; although emotion and fatigue caused the re-appearance of the exophthalmia sometimes momentarily; it occurred, however, in a much less degree than before the operation. The author states that there is no longer any trace of the goître, and that the general physical and mental condition has remained excellent.

The American Association of Obstetricians and Gynæcologists.—The tenth annual meeting will be held in Niagara Falls, N. Y., on August 17th, 18th, 19th, and 20th, under the presidency of Dr. James Frederick William Ross, of Toronto, Canada. Besides the president's address, the programme includes the following papers:

Puerperal Eclampsia, with Special Reference to Treatment, by Dr. William Warren Potter, of Buffalo; Puerperal Insanity, by Dr. Walter P. Manton, of Detroit; Puerperal Diphtheria, by Dr. H. W. Longyear, of Detroit; What is the Principal Cause of Puerperal Sepsis? by Dr. John Milton Duff, of Pittsburgh; The Surgical Treatment of Puerperal Sepsis; its Possible Prevention, by Dr. Edwin Ricketts, of Cincinnati; The Treatment of Puerperal Endometritis by the Carossa Method, by Dr. Edward J. Ill, of Newark, N. J.; Incubation, by Dr. John A. Lyons, of Chicago; Two Cases of Intestinal Obstruction; Operation and Recovery, by Dr. William Wotkyns Seymour, of Troy, N. Y.; Tonic and Spasmodic Intestinal Contractions; with a Report of Cases, by Dr. X. O. Werder, of Pittsburgh; Post-operative Lesions and Sequelæ; their Extent and Character, and How to Deal with Them, by Dr. Joseph Price, of Philadelphia; Some Remote Sequelæ of the Baer Operation, by Dr. Rufus B. Hall, of Cincinnati; The Sequelæ of Dead Ligatures and Sutures, by Dr. George M. Hughes, of Philadelphia; The Early Diagnosis and Treatment of Cancer of the Uterus, by Dr. William H. Myers, of Fort Wayne, Indiana; Post-climacteric Conditions Simulating Advanced Uterine Cancer, by Dr. M. Rosenwasser, of Cleveland; Pelvic Inflammation; its Causes and Relations, by Dr. A. P. Clarke, of Cambridge, Massachusetts; The Prevention of Pelvic Disease, by Dr. W. H. Humiston, of Cleveland; Cysts of the Abdominal Wall, by Dr. Richard Douglas, of Nashville; Masturbation in the Female, by Dr. B. Sherwood-Dünn, of Los Angeles, California; Recent Experiences with Ventrofixation, by Dr. H. E. Hayd, of Buffalo; Which is the Preferable Operative Method of Holding the Uterus in Position? by Dr. C. C. Frederick, of Buffalo; Reports of Cases of Re-operation Following Ventrofixation, by Dr. Joseph Price, of Philadelphia; Technique of the Dry Method, by Dr. Edwin Walker, of Evansville, Indiana; Surgical Shock; its Prevention and Treatment, by Dr. Walter B. Chase, of Brooklyn; Imperforate Anus, by Dr. John A. Lyons, of Chicago; Placenta Prævia, with Special Reference to Treatment, by Dr. W. H. Wenning, of Cincinnati; Ectopic Gestation; a Discussion of the Changes Occurring in the Retained Ovum, Effused Blood, and Maternal Tissues, by Dr. L. H. Dunning, of Indianapolis; Complete Hysterectomy after Injury During Parturition and Cæsarean Section, with a Report of Cases, by Dr. Joseph H. Branham, of Baltimore; A Case of the Porro Operation; Recovery of Mother and Child, by Dr. David Barrow, of Lexington, Kentucky; Dynamic Ileus Following Abdominal Section, by Dr. Frederick Blume, of Allegheny, Pennsylvania; The Surgery of the Kidney, by Dr. J. B. Murphy, of Chicago; Limitations of the Surgery of the Liver; with a Report of Cases, by Dr. W. G. Macdonald, of Albany; The Administration of Phosphate of Strychnine During Gestation, by Dr. W. B. Dorsett, of St. Louis; The Fate of the Ovaries in Retrodisplacements of the Uterus, by Dr. A. Goldspohn, of Chicago; Fifty Cases Illustrating Personal Experience with Medical and Surgical Treatment of Appendicitis, by Dr. George S. Peck, of Youngstown, Ohio; Appendicitis in Relation to Diseases of the Uterine Annexa and Pregnancy, by Dr. John B. Deaver, of Philadelphia, and the Operation Itself in Appendicitis, by Dr. L. S. McMurtry, of Louisville.

An exhibition of pathological specimens, with histories and photographs of the same, will be given by Dr. Dorsett, Dr. Vander Veer, Dr. Macdonald, Dr. Price, Dr. Ross, Dr. McMurtry, and others. Dr. Ross, Dr. Carstens, Dr. Johnston, Dr. Vander Veer, Dr. Price, Dr. Murphy, Dr. Reed, Dr. Peck, Dr. Deaver, and Dr. McMurtry will take part in a general discussion on appendicitis.

A Case of Psychro-æsthesia.—In parts lxxvii and lxxviii of *Brain* Dr. Leonard G. Guthrie gives the following history: The patient's general health has always been good, although he has always suffered from cold hands and feet. In July, 1892, while he was kneeling at work, his right knee became locked, and always did so thereafter whenever he knelt down. In August, 1893, he fell while walking, from a similar cause. Effusion took place into the joint and he could not work for several weeks. At the hospital loose cartilage was found in the right knee, and this under treatment soon ceased to give trouble, but the sensation of coldness increased until it amounted to positive pain which is described as follows by the patient:

"The coldness in my right leg has gradually got worse, with peculiar pains such as aching, smarting, and numbness, all at once and mixed together. If I put my foot to the ground the cold pain is there with aching and numbness, and it gets worse the longer it is on the ground. If I sit with it on the floor it is the same, and like a cold wind blowing on my thigh. After dressing I have to sit with my foot up in front of the fire, and then the cold wind seems on my thigh the same. I can not walk for more than a few minutes without wanting to sit down and raise my leg. When the coldness first came on it seemed as though my foot was placed on ice, in the hollow of the foot, but now it is all over the foot, top and bottom alike, and the coldest pain comes from the roots of my toes. The foot and leg always seems as though there was a lot of insects trying to pass each other and can not, and so cause the pain such as I have described. I am easiest when I can put my foot and leg in a hot bath, or when lying in bed, but I can not bear anything to touch me on the leg besides the bedclothes, as it seems to stop all circulation and cause numbness and aching."

Since he has been under the author's care, this account of his symptoms has not varied, except that he has recently complained of sensations of coldness in the right arm, particularly the shoulder, and in the left leg. The right leg is, however, much the more severely affected. He has been unable to work for two years, and has increasing difficulty in getting about.

He is described as a strong-looking but loosely-built man. He complains of no symptoms but those mentioned. His thoracic and abdominal organs are sound. His digestion and appetite are good. There is nothing abnormal to be seen about the upper extremities. The left lower extremity has some varicose veins. The right lower extremity is flabby. The thigh measures an inch less, and the calf three quarters of an inch less, in circumference than the corresponding portions of the opposite limb. There are no varicose veins and there is no œdema here. There is now no evidence of loose cartilage in the knee joint. The limb is weak in proportion to the wasting. He uses two sticks in walking, for fear of falling, but is able to walk unassisted.

The knee-jerks are present and equal on both sides. He can stand steadily with eyes shut and heels together.

Tactile sensation is perfect, also appreciation of heat and cold, but the application of cold to the right leg is distressing, while that of heat is agreeable to him. There is no difference in the temperature of the two limbs. Both are warm to the touch, and he admits that this is so, although the sensation of coldness in the right leg obliges him to wear two or three thick stockings.

He recognizes a pin's prick readily, and winces. He states that he is unable to feel faradaism applied to the right leg by means of a wire brush so readily as he used to do when under this treatment two years ago. He certainly tolerates, without showing signs of pain, a much stronger faradaic current than the author could endure himself. The electrical reactions are quite normal. His muscular sense is unaffected. He imitates correctly any attitude in which one leg may be placed, with the other, and describes their positions correctly with his eyes closed. There are no tender points or patches of anæsthesia in the course of the nerves of the limbs. His sensations of cold are not confined to the area of distribution of any particular nerves.

The general opinion regarding these cases, says Dr. Guthrie, appears to be that they are indications of local mischief. As such they seem to resemble those described by Weir-Mitchell under the name of causalgia, although in his causalgia there is a history of direct injury to the nerves themselves. The peculiar pain was associated with redness or glossiness of the skin, and with thickening of the trunks of the nerves above the site of pain. In this case there is no evidence of trophic degeneration of the nerves, and no definite local cause exists. There is no evidence of peripheral neuritis; the patient has no loss of temperature, local or general, no blanching, and no œdema of the limb. The only physical signs present are slight wasting and slight weakening of the right lower limb. It might be thought, says the author, that these conditions are dependent upon the loose cartilage from which he has suffered. Yet neither this nor any other local cause can account for the involvement of the right arm and left leg.

It is therefore probable, he thinks, that the wasting and weakness, and, perhaps, the loose cartilage also, are indications of general dystrophy resulting from some central nervous condition, which also affects the right arm and left leg similarly, but to a less extent than the right lower limb. If it is central, the lesion may be either cerebral or spinal. If it is cerebral, one must first ask whether the symptoms are due to a mere psychosis. It must be admitted that his symptoms are mainly subjective. The only objective evidence of hindered sensation is his remarkable tolerance of strong faradaic currents, the significance of which is obscure. The pathology of subjective sensations must always be elusive, Dr. Guthrie continues, and we are apt to assume that it is non-existent in the absence of physical signs, and to attribute complaints for which there is little to show to malingering, hypochondriasis, or hysteria. The patient in this case has nothing to gain by malingering, as he has enough money to live upon, at all events, for the present. His symptoms are not such as would be hit upon by a malingerer. He seems as much troubled by his presumably enforced idleness as by the sensations of which he complains. Hypochondriacs often discover strange symptoms, but they soon appear to tire of them, and invent new sets as the novelty of the old wears off. But this patient's account of himself has never varied during the two years Dr. Guthrie has known him. He is not, moreover, gloomy or depressed, but takes a semi-humorous view of his condition; being cheerfully apologetic when remedies fail, and also appearing grateful for any attempts to relieve him. This is unlike the ordinary hypochondriac.

The duration and unchanging nature of the symptoms, and the absence of special signs of hysteria and of the hysterical temperament generally, are against the diagnosis of this affection. It is difficult, therefore, to dismiss the symptoms as imaginary, functional, or feigned.

As regards gross cerebral lesions, the author goes on to say, only multiple and bilateral affections could involve the sensory tracts of both legs and one arm; and it is extremely improbable that the face, the special-sense tract, and also the motor tract, would escape were this the case. There is, moreover, no evidence, so far as he is aware, that the peculiar sensations of which this patient complains are ever associated with cerebral disease situated either in the cortex or elsewhere. On the other hand, there is abundant evidence that parallel, if not absolutely identical, sensations may be associated with disease of the spinal cord or of its nerve roots.

In the present case Dr. Guthrie thinks that lesions of the spinal roots may be excluded, as well as the nerve lesions and cerebral affections, and that there remains only a lesion of the spinal cord to be considered. The symptoms are not distinctive of the lateral or posterior columns, but it may be, he says, that the anterior horns are implicated, because of the slight wasting and weakness of the lower extremity which prevail. The course of thermal sensations in the cord and also the course of sensations of cold are unknown. The frequency, however, with which such sensations are altered or annulled, together with those of pain, suggest, he thinks, that the paths of heat, cold, and pain may be contiguous. There is evidence that painful sensations pass through the posterior commissure on their way to the antero-lateral tract on the opposite side.

Regarding treatment, Dr. Guthrie states that rest and the actual application of heat gives temporary relief. Stimulating embrocations, ointments containing capsicum, and flying blisters applied to the thigh have been beneficial for a time; electricity, in the form of galvanism and faradaism, has been useless. All kinds of nerve sedatives and tonics have been tried in vain.

Oil of Turpentine as a Remedial Agent.—In an article on this subject in the *Therapeutic Gazette* for July 15th, Dr. James B. Walker says that his first experience with oil of turpentine occurred in the following case: The patient, who had previously been healthy, had ulcer of the stomach and was rapidly being rendered almost exsanguine by the most excessive hæmorrhages. Not only did the ordinary remedies fail to relieve, but each in its turn seemed only to aggravate the hæmatemesis, until the case seemed absolutely hopeless. At the suggestion of a person who had known of a case in which severe vomiting of blood had been arrested by oil of turpentine, it was resorted to by Dr. Pawling, of Montgomery County, Pennsylvania, who had charge of the case in question. The first dose of it was the first thing that had been retained for days, and thereafter recovery was rapidly effected without resort to other remedies, except the ice-bag. The result in this case, says Dr. Walker, established to his satisfaction the value of oil of turpentine as a hæmostatic. He has since used it in a number of cases of gastric ulcer in hospital and private practice, and he states that his first impressions have been firmly established.

Its benign influence, he says, in irritable cases is inconceivable without personal experience. The best method in gastric cases with decided irritability is to give the oil in suspension. The globule or capsule, forming a palpable mass, will often be rapidly ejected, whereas the diffusing vapors from the solution rapidly dispersing through the viscus may be retained. The best solution is not the gummy emulsion, unpalatable and nauseous to most persons, which he thinks is to be named only to be condemned, but the solution made at the bedside, dose by dose, by stirring from two to ten drops of oil of turpentine in an ounce or two of water well sweetened with the *saccharum anisi* of the German Pharmacopœia. The acrimony of the oil of turpentine is by this means entirely corrected, if the proper amount of the medicated sugar is used; and both palate and stomach accept it readily if not eagerly. This is the preferable method in administering it to young children, for whatever purpose it is given, and for all patients at whatever period of life if an irritable stomach is to receive it.

Where an angry viscus or the age of the patient is not a consideration, says the author, the sealed capsule, soft or hard, is to be preferred. This or any other volatile agent should never be administered in the bivalve capsule, so convenient for non-volatile substances.

In hæmatemesis from other causes than ulceration the drug may serve as a valuable hæmostatic. In that arising from chronic alcoholism or in chronic venous engorgement from other causes it is more efficient than the astringents, and combined with hygienic necessities will often prove efficacious. If hepatic obstruction exists it, of course, can only effect its hæmostatic purpose.

Dr. Walker states that it is not only in ulceration that oil of turpentine proves itself to be a boon in gastrointestinal troubles, but that in subacute and chronic catarrhal conditions it is of equal value. Its property of rapid diffusion distributes it more or less throughout the entire intestinal tract, and thus it is brought into intimate contact with the catarrhal area more rapidly and more certainly than any non-volatile remedy, and applies whatever healing virtue it may possess more surely wherever it is required.

In the catarrh of the stomach and intestines, says the author, after the acute symptoms subside, there is often left an irritability which lingers to annoy and, when the disease affects the stomach, even to threaten life. In the bowels, the pain is usually referred to the suprapubic and inguinal regions, and is accompanied by a sense of heaviness and a general feeling of languor and depression. For these conditions, says Dr. Walker, no remedy has been so useful in his experience as the oil of turpentine. Of course, he says, hygienic indications have been followed also, and he does not for a moment wish it to be understood that he advocates this treatment to the exclusion or neglect of dietetic or hygienic treatment. But, for such a condition he thinks that oil of turpentine outranks them all. Here it must be administered as before suggested, and where the stomach is non-retentive the solution in anise-sugar water, given in small doses every two hours, is to be resorted to. In the other cases the five-minim capsule should be given an hour after meals, when it will be least likely to be regurgitated; an extra capsule may be given at bedtime if there is much tympanites or irritation.

In catarrhs of the respiratory system, after the acute symptoms have subsided, where a free secretion is present or where the catarrh persists, with or without localized subcrepitant râles, so frequent in lingering attacks of influenza, its value is exceptional. Being excreted in part by the pulmonary mucous membrane, it reaches directly from within the surfaces and even the cells of the tissues involved. It is greatly preferable to the ammonium salts, because more efficient and more acceptable to palate and stomach. In the more chronic cases, where creosote and guaiacol are recommended, it has been in the author's hands equally efficacious and often less objectionable.

In the bronchial catarrhs of the aged and the infirm of any age its stimulating qualities as well as its local alterative effect make it invaluable.

In the catarrhal conditions of phthisis, especially when bronchorrhœa is present and even where the secretion is only fairly free, its remedial effects are easily appreciated; and here again, whether cavities are present or not, it should rank as equal if not superior to creosote and guaiacol. In the hæmorrhages of phthisis he thinks it should hold the first rank among drugs.

Here, as in intestinal catarrhs and hæmorrhages, its internal administration may be supplemented by its external use in the form of a stupe, although in some, perhaps most, instances the ice-bag is preferable for external application.

Inasmuch as the renal shares with the pulmonary mucosa in its elimination, it finds opportunity for service in chronic catarrhs of the urinary tract. Dr. Walker states that he has not used it in chronic catarrhal nephritis, but believes that, cautiously used in small doses in cases under close and frequent observation, it will often serve a good turn in the almost hopeless maiming to which the renal mucosa is subjected in this form of Bright's disease. Certainly, he adds, in chronic vesical catarrh, with or without enlarged prostate, it has proved of much value in the few cases in which it has been given. In chronic cystitis and urethritis of gonorrhœal origin it is very useful, its action being similar to that of oil of sandalwood, and even more certain.

In hæmaturia it has the same virtue as in other hæmorrhages from mucous surfaces, and in a number of instances of metrorrhagia without tumor or other palpable cause oil of turpentine has acted well in the author's hands.

Desquamative Erythrodermia due to the Use of Cacodylic Acid in the Treatment of Psoriasis.—At a recent meeting of the Société de dermatologie et de syphiligraphie, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for July 15th, M. Balzer and M. Griffon presented two patients who had been treated with sodium cacodylate in large doses for psoriasis, and during the course of the treatment a generalized erythema had appeared and been followed by desquamation of the skin in large flaps.

The first patient was an old man with persistent psoriasis, and he had gradually reached the amount of eight grains a day. One morning he had been found in a grave condition, with prostration, fever, anorexia, oliguria, and a red tumefaction over the entire surface of the body. On the following days, after the cessation of the treatment, the general condition had become ameliorated, and the skin had fallen in large, thick patches.

The second patient was much younger and had a form of psoriasis that was extremely susceptible to various therapeutic agents, and the skin had become red and irritated on the prolonged application of even a slightly active local agent. The eruption consisted of large, red, confluent papules in patches, generalized, but more apparent on the hands, the feet, and the face. In this case the amount of cacodylic acid had not exceeded eight grains a day. The desquamation in large flaps resembled that of scarlatina.

The tolerance of cacodylic acid in large doses, the authors said, was not so general as had been thought at first; the drug might cause, in patients predisposed to them, symptoms similar to those caused by other preparations of arsenic.

M. Daulos stated that he had given much larger doses with varying results. In one case, he said, a veritable eczema had resulted. He had suspended the treatment and the symptoms had ceased, only to return, however, when the use of the drug was resumed.

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Original Communications.

SPONDYLOLISTHESIS,

WITH THE DESCRIPTION OF A CASE.*

By ROBERT W. LOVETT, M. D.,
BOSTON.

The name spondylolisthesis (σπόνδυλος, a vertebra, and ὀλισθήσις, a gliding) refers to a forward subluxation of the body of one of the lower lumbar vertebræ, with the exception of one recorded case where the upper part of the sacrum was displaced forward. This displacement has ordinarily been described as a dislocation; in most instances it hardly reaches a greater degree than may be described by the name subluxation. Even this name is incorrect anatomically. This is because the body of the vertebra is chiefly affected, while the laminæ and spinous process remain practically in place.

The condition has attracted attention chiefly from the obstetrical point of view, on account of the secondary pelvic changes produced, and surgical literature contains next to nothing about it. Fr. Neugebauer (1), of Warsaw, has so thoroughly investigated and elaborated the subject that whoever strives to elucidate it from any point of view must do so largely by quotations from his extensive writings.

In 1854, when this condition was recognized and named by Killian (2), there were described only four known anatomical specimens. In 1890, when Neugebauer's treatise was written, there were one hundred and one clinical and anatomical observations. Blake (3), Gibney (4), and Lombard (5) contributed the only recorded American observations. Between the publication of Neugebauer's classic in 1892, which was written in 1890, and to-day there have been reported, so far as I could find, twenty-four more cases (two in men).

The later cases add little to the surgical interest, excepting those of Dollinger, where the deformity occurred in a child of three years, as the result of a fall; the case of Lane, reported in 1893, where laminectomy was performed for the relief of pressure symptoms and the lamina of the fifth lumbar vertebra removed; the preparations by Chiari, which are of pathological interest; and the case described by Braun von Fernwald, which, with his paper, is noteworthy for its completeness and pathological interest (see references). So far as could be learned, no American case has been added to those of Neugebauer's list, except the one here described.

Lane † dissents from Neugebauer that the affection is one of great rarity, believing that it occurs commonly among people who perform heavy manual labor, and he goes so far as to state that "looking at the changes which the skeletons of laborers undergo, I found that in fully developed coal heavers spondylolisthesis is the normal condition, and that in other occupations a similar displacement existed." On the whole, however, the tendency of opinion seemed to be with Neugebauer, that the affection is a rare one, and that the pathological scheme proposed by him is, on the whole, a correct one.

Pathology.—The pathological condition is fairly constant, the degree and location varying within certain limits. The essential part of the condition seems to be the slipping forward of one of the lower lumbar vertebral bodies, while the vertebral arches remain practically in place. This implies, of course, an increase in the distance between the body and the spinous process of such a vertebra, and the cause of this elongation or division of the vertebral arch is the subject of the discussion. That this condition exists is established beyond any doubt by the specimens in the museums of Europe.

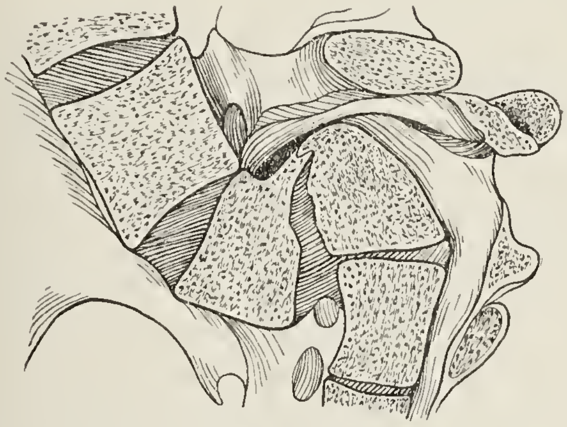

Fig. 1.—Pelvis of Moscow (median section). Instance of extreme forward displacement of fifth lumbar vertebra. (Neugebauer.)

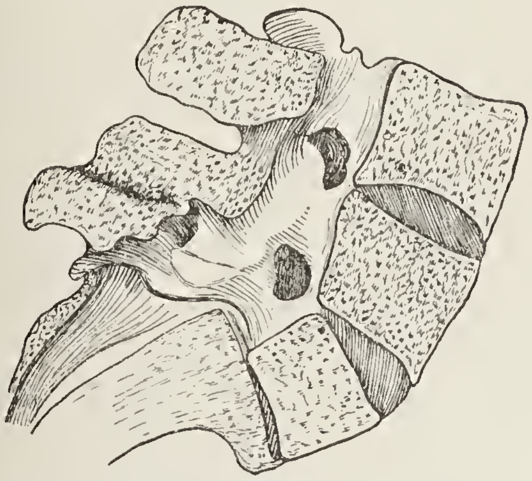

Fig. 2.—Small pelvis of Prague (median section). Instance of slight forward displacement of fifth lumbar vertebra. (Neugebauer.)

The commonest form of the displacement is subluxation of the fifth lumbar vertebra in relation to the sacrum (thirty in forty-two specimens). The displacement of the fourth lumbar vertebra in relation to the fifth is next in frequency (twelve in forty-two specimens). The displacement forward of the first sacral vertebra in relation to the rest of the sacrum has been recorded once only (H. von Meyer, Zurich specimen). This specimen has been spoken of as pseudo-spondylolisthesis, but the distinction seems hardly worth maintaining.

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* Read in abstract before the American Orthopædic Association, at Washington, May 4, 1897.

† *Lancet*, 1893, xxix, p. 991.

The displacement may be slight and the fifth lumbar vertebra project only slightly ahead of the sacrum[*] (Prague specimen), or it may be extreme, and the fifth lumbar vertebra may be rotated through ninety degrees, and its lower surface in this case will lie against the front of the upper part of the sacrum (*e. g.*, Halle specimen, Moscow pelvis, see Fig. 1). Secondary changes occur in the severer cases. The displaced vertebra may become condensed and wedge-shaped, and pressure effects in modifying the shape of bones are also noticed in the upper part of the sacrum. Exostoses may develop about the joints of the displaced vertebræ, apparently elongating them, and the intervertebral joints may be obliterated or the fibro-cartilage may be replaced by an arthrodial joint. The intervertebral discs in the region of the deformity are changed in shape by the pressure, and at times some modification of the articular processes may result from the pressure, but these changes are not uniform. The bony arch connecting the vertebral bodies and the laminæ may, as I understand it from the literature, be either thinned and intact, or it may be separated entirely. This may be a unilateral or bilateral condition.

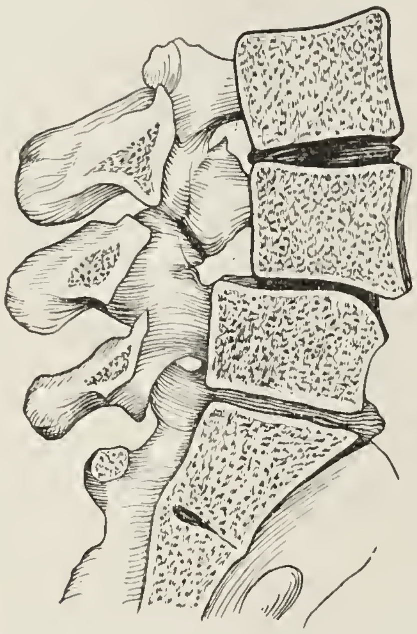

Fig. 3.—Breslau specimen. Instance of slight forward displacement of the fourth lumbar vertebra. (Neugebauer.)

The pathological condition may be better understood by a glance at the figures than by any discussion, however lengthy. The amount of displacement obviously varies within very wide limits, and with it the clinical phenomena must vary also.

So marked a change in this region of the vertebral column, where the curve is so sharp, results, of course, in a marked disturbance of equilibrium, and the symptoms vary as the direct outcome of the mechanical condition. The posterior superior iliac spines are more widely separated than normal in severer cases and the inclination of the pelvis is diminished (Neugebauer).

The essential point, it may be repeated, in spondylolisthesis is not so much the subluxation of the body of the vertebra as the antero-posterior elongation of the body of the lumbar vertebra. This exists always, and is apparently the pathological condition peculiar to this situation and this condition.

In comment on this it should be remembered that each vertebra develops from three centres of ossification, one for the body and one for each lamina and its processes. The vertebral arch forms during the first year by the joining of the two posterior centres of ossification, but this is not joined to the centre of ossification of the vertebral body until the third year (Gray).

The causes of separation of the anterior and posterior parts of the lumbar vertebræ are classified by Neugebauer, and generally accepted to be as follows:

I. Separation on one or both sides between the body and the laminæ of the vertebra.

(*a*) Due to a defect in development.

(*b*) Due to fracture.

II. Primary disease of the sacro-vertebral articulation.

III. Vertebral deformity, due to superimposed weight and bony changes resulting from pressure.

Each of these divisions will be briefly considered in turn.

I (*a*). *The Separation of the Vertebral Arch due to Congenital Defect.*—Deficient union or absence of union between the vertebral laminæ and the bodies is recognized under the formidable names of spondylolysis or spondyloschisis (Lambl (6)). Such a lack of union, or imperfection of union, might, under the circumstances of injury or excessive weight-bearing, predispose to spondylolisthesis. That such congenital deficiency of vertebral union is not excessively rare is shown by the statement of Neugebauer that Langer estimates this defect as occurring in ten per cent. of skeletons, and Jendrzichinskiz as in five per cent. Neugebauer has found two hundred and forty anatomical specimens in European museums illustrating the condition, and a good deal has been written on the subject.[*]

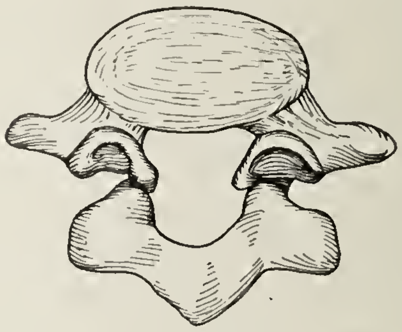

Fig. 4.—Specimen from the museum of Kölliker at Wurzburg, showing double defect in the vertebral arch. (Neugebauer.)

I (*b*). *Separation of the Vertebral Arch due to Fracture.*—Fracture between the bodies and the laminæ of the vertebræ may occur in the lumbar vertebræ, and at first all cases of spondylolysis were described as traumatic (Howship, Bell, Otto, Mayer, etc.). Now, after cases of separation of real congenital origin have been set apart, clearly traumatic cases of fracture in this locality are also to be recognized. There are such specimens in many European museums. (Royal College of Surgeons, No. 433, three lumbar vertebræ. St. Thomas Hospital, E. 27, fifth lumbar vertebra. Museum of Freiburg, N. O. II, two second lumbar vertebræ. Anatomical Museum at St. Petersburg, fracture of the fifth lumbar vertebra with callus, and others.)

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[*] Berlin specimen, Virchow's.

[*] Broca. *Bull. de la Soc. d'anat. de Paris*, 1884, p. 448.—Treub. *Nouv. arch. d'obst. et de gyn.*, 1889, iv, 410, with figures.—Turner. Report on Human Skeletons. *Challenger's Reports*, xvi, 1886.

Fractures located here may occur from indirect violence, by *contre-coup*, as in falls, and from hyperflexion of the trunk, as at the lower lumbar region the movable vertebral column changes to the rigid pelvis, and the mechanism of such fractures can be studied in Krukenburg (7), Meyer (8), Strasser (9), Winckel (10), and Czaussouw (11). Apparently, from the case recorded in this paper such fractures also result from direct violence.

II. *Disease of the Sacro-vertebral Articulation.*—Strasser (9) has advanced the theory that inflammation of the lumbosacral articulation may be the cause of the deformity. In addition to the case reported by him, a specimen in the museum of Czaussouw, at Warsaw, supports the theory that such arthritis (probably of traumatic origin) may be the cause of spondylolisthesis, not only by its own effect, but by causing secondary changes in the arches and their connection with the bodies of the vertebræ.

III. *Bony Changes the Result of Pressure.*—W. A. Lane (12) has advanced the theory that excessive weight-bearing and hard labor may be the cause of spondylolisthesis, and, as the result of his demonstration that continuous severe bony pressure is able to cause bone atrophy and absorption, he finds the cause of the elongation of the vertebral arch and the wedge-shaped condition of the displaced vertebræ is a mechanical result of such long-continued or excessive pressure.

By its anatomical position the body of the fifth lumbar vertebra is likely to be pushed forward, especially if imperfectly supported by the ligaments. The relation that this pressure bears to the tendency of pregnancy to increase and at times to cause spondylolisthesis is of interest inasmuch as the pelvic articulations are softened and vulnerable during pregnancy. Lane lays the greatest stress upon hard manual labor as the causative factor.

This theory undoubtedly bears upon all cases to some extent and explains others wholly. Within certain limits it meets with almost universal acceptation. It has been elaborated at length by Lane in various papers, and his opinion as to the frequency of spondylolisthesis has been already alluded to.

Chiari [*] advances as a cause the abnormal development of the lumbo-sacral-joint area, and bases this on a case where he found lengthening of the lower surface of the fifth lumbar vertebra (without lengthening of the arch), thus classing it as an abnormity of development.

The development of exostoses about the articular surfaces of the displaced vertebra has been already alluded to (specimen in Neugebauer's collection, figured in book, p. 6, Fig. 1).

Other theories as to ætiology may be dismissed with a mere mention as being unsupported by pathological evidence; such as Lambl's theory [*] that the deformity is due to fœtal hydrorrhachis, etc., that spondylolisthesis is the result of inflammatory bone disease (13) or softening of the joints.[†]

Causation.—Spondylolisthesis is recorded as affecting women more frequently than men, and comparatively few male cases have been recorded.

It occurs almost always at puberty or in young adult life, and the majority of all cases, of whatever kind or degree, where any history is obtainable, give the account of a severe traumatism, occurring most often during childhood or near puberty. Falls from a distance, striking on the back, blows upon the lumbar region, or forced flexion of the spine, are the causes generally given. The deformity may follow immediately upon the accident, or it may develop in after years, just after puberty or during pregnancy. Other cases are to be accounted for only by frequency of pregnancy or by very hard work. Many cases are incompletely recorded, and in a few no assignable cause can be found.

Symptoms.—It is obvious on reading the literature on the subject that many cases must present trivial symptoms, for the spondylolisthesis has often been first detected in the autopsy room or upon the dissecting table, and by an inspection of the figures of the pathological specimens recorded it is evident that the degree of bony displacement varies so widely that the symptoms must needs range from a slight increase in the backward prominence of the iliac crests to a condition where the patient walks forward with a gait almost like a quadruped (see references).[‡]

The symptoms by which the diagnosis must be made are as follows: A disturbance of equilibrium resulting in a faulty carriage, which is shown chiefly by a sharp increase in the lower lumbar curve in even the mildest cases. More exactly it seems to be a prominence of the iliac crests and buttocks in relation to the lumbar spine. There is no apparent falling away of one spinous process from another, for reasons that have been demonstrated in speaking of the pathology. The spine curves forward sharply from the sacrum, and this gives undue backward prominence to the crest of the ilium and the buttocks. The appearance at first glance is the same as that in cases of double congenital dislocation of the hip. Lateral deviation of the spine may be present, and is generally indicative of a lesion more or less unilateral. Pathological examination has shown that spondylolisthesis not infrequently exists only on one side; lateral deviation may, however (as in the case here reported), be only an indication of muscular irritation, similar to the lateral deviation in Pott's disease, and, as in that case, it may be temporary and disappear largely under treatment. With this lordosis goes a diminution of the obliquity of the pelvis, which rotates on its transverse axis, and the pubis is higher than it should be normally, while the sacrum is lower. The combination of lordosis with diminished pelvic obliquity is said to be pathognomonic by Neugebauer. The rotation of the pelvis is an important factor in that it tightens the anterior ligaments of the hip, and thus tends to cause a flexed position of the thighs.

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[*] *Zeitsch. f. Heilk.*, 1892.

[*] Lambl. *Cent. f. Gyn.*, 1881, xi, p. 25; xii, p. 28; 1885, xxiii, p. 356. Virchow's *Archiv*, 1857, xi, 2, 187.

[†] Bohn. *Inaug. Diss.*, Berlin, 1892. A New Case of Spondylolisthesis, with Successful Delivery.—Olshausen. (*a*) *Mon. f. Geb. u. Gyn.*, 1861, Bd. xvii, p. 255. (*b*) *Mon. f. Geb. u. Gyn.*, 1864, Bd. xviii, p. 190.

[‡] Paderborn case. Killian. *Comment. Anat. Obst. de Spondylolisthesis*, Bonn, 1853.—Halle case. Olshausen. *Monatsschrift für Geburtshülfe und Gyn.*, 1861, xvii, 255; 1864, xxiii, p. 190.

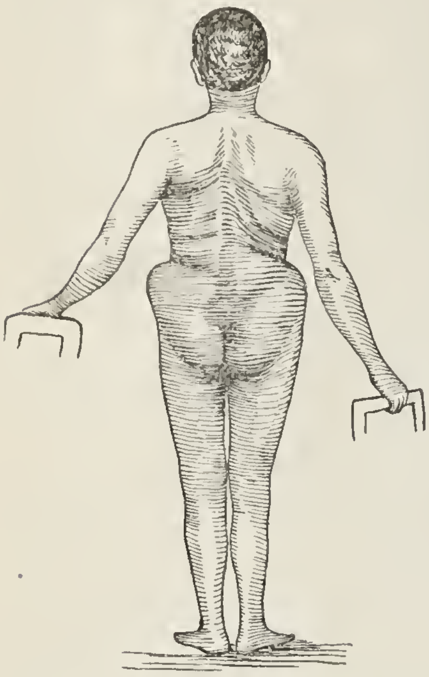

Fig. 5.—Case of spondylolisthesis. (Breisky.) Woman thirty years old.

Vaginal examination shows, of course, a prominence high up on the posterior wall of the pelvis, and the obstetrical side of this aspect of the question has been elaborated with the greatest thoroughness and by the most careful measurements. The trunk is shortened in relation to the legs, on inspection, even in such mild cases as the one recorded, and the thorax tends to approach the pelvis. In the severer cases the distance between the ensiform cartilage and the pubes is surprisingly diminished. In the severer cases lateral folds of the skin in the back or abdomen are likely to appear.

The gait in spondylolisthesis is said by Neugebauer to be modified in a characteristic way, and by tracings taken he has apparently demonstrated that the footprints resemble those of a normal woman at the end of her pregnancy. The footprints in severer cases show marked eversion of the feet; but what is more characteristic is that the prints of the right and left foot in progression lie more nearly ahead of each other than is normal, and a straight line passes through the heel prints of both right and left foot, which is not the case in the normal foot. Braun von Fernwald, however, failed to confirm Neugebauer's observations in this regard and the question still remains open, but it would seem that any abnormity of this sort must vary so much in proportion to the degree of pain and deformity that the diagnostic value must be slight.*

Pain and stiffness, of course, follow the accident, and nervous disturbances of the legs and feet, varying from those of slight degree to complete paralysis, may be present. The affection is not, however, one characterized by excessive pain.

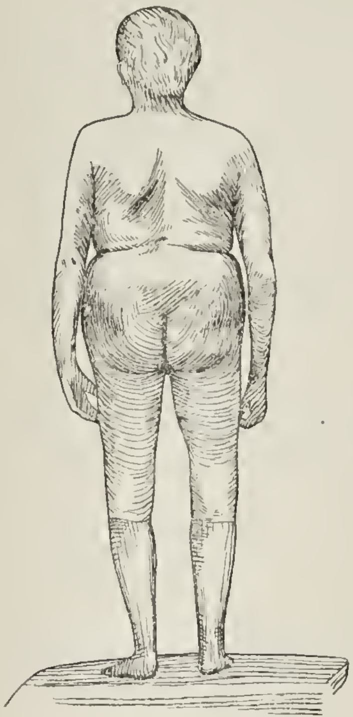

Fig. 6.—Case of spondylolisthesis. Woman thirty-six years old. Hard work but no severe trauma. Rear view. (Braun von Fernwald.)

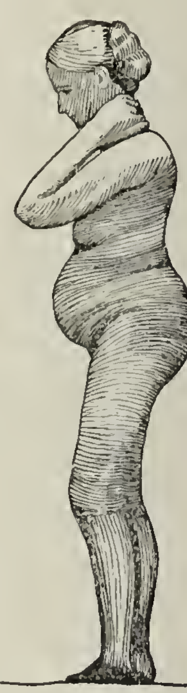

Fig. 7.—Side view of same case as Fig. 6. (Braun von Fernwald.)

The chief signs by which diagnosis is to be made are evidently an increased lumbar lordosis occurring in connection with pregnancy or a fall; a disturbance of the relation in the spines of the lumbar vertebræ to the crests of the ilium; shortening of the trunk; a disturbance of equilibrium resulting from the distortion; generally some scoliosis, and often some inability to extend the legs fully.

The differential diagnosis must be made from Pott's disease, double congenital dislocation of the hips, and rickets. Pott's disease offers the greatest difficulty, and exclusion of it must be made on general diagnostic points.

In the case here recorded the gait and the general symptoms at first were strongly suggestive of lower lumbar Pott's disease, but this failed to explain the attitude, the shortening of the trunk, the flexion of the thighs, and the peculiar lordosis.

The absence of a knuckle or a rigid area in the upper spine, along with a deformity not accounted for by softening of the bodies of the lumbar vertebræ, would generally serve to make this clear. Such immediate and permanent improvement resulting from fixation as occurred here is not, as a rule, consistent with the existence of tuberculous diseases of the bodies of the lumbar vertebræ.

Double congenital dislocation of the hips is easily excluded by finding the trochanters on Nélaton's line and the history of the case, where it is obtainable.

Rickets must be recognized by its general diagnostic signs. In rickets the pelvic inclination is increased, and in any case so severe as to produce a very marked lordosis other characteristic signs must be found.

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* *Arch. für Gyn.*, 1896, p. 126.

Treatment.—So far as can be judged from the case here recorded, and from the few cases considered, from a surgical aspect the most successful treatment consists in fixation of the lower spine by a jacket or brace until the fracture, if such has occurred, has united and the products of the injury have been absorbed; or, if heavy weight-bearing has been the cause, until the stretched and weakened tissues have resumed as normal a position as possible. This period must, of course, last for months, or in cases of great deformity it would seem as if a fixation support must be permanent. Generalizations from one case are of little value, but in the case recorded the greatest benefit was found at once from the application of a plaster jacket. Laminectomy, as demonstrated by the case of Mr. Lane, is an operation to be considered where symptoms of bony pressure are present for any length of time. He found, however, the greatest difficulty in removing the lamina, which was in this case somewhat displaced forward. On opening the spinal canal it was evident that bony pressure existed by the bulging of the compressed parts. In Gibney's case an unsuccessful attempt was made to reduce the deformity under ether.

NOTE.—A complete index of literature previous to 1890 is to be found in Neugebauer's monograph, *Spondylolisthésis et Spondylizème*, Paris, 1892, G. Steinheil, éditeur.

William C., eighteen years old, a young man at school, was referred to me on September 5, 1896, by Dr. J. E. Garland, of Gloucester. He had always been fairly well except as a baby, when he had been sickly, with no especial disease. Later he grew strong, and as a boy and young man was free from all disability, athletic, well developed, and of good physique. There was nothing unusual about his figure. He was straight and square, and able to do as much or more than other boys.

On April 3, 1896, he was helping about a stable and was leading a harnessed horse, which was attached to a heavy wagon; the horse took fright at something and became unmanageable; the young man lost his hold, the horse ran away, and both wheels of the wagon, weighing twenty-six hundred pounds, passed over his pelvis.

The patient suffered much pain; he found that he could not bear any weight on his feet, nor could he sit down. He was carried home and, as I understand it, had no medical attendance. He had no passage of blood from the urethra or rectum, and was only confined in bed for a week or so. At the end of that time his family got him crutches and he went around more or less, although he suffered a good deal of pain, mostly in his legs and a little in his back.

When he came to see me he walked very badly, bent forward, and leaned well over to the right. There was marked limitation of motion in the lumbar region of the spine, and when he lay on his back the knees could not be touched to the table.

On inspection he was found to be a well-developed young man, standing bent over forward and to the right. Movement in all directions was attended by much pain, and he looked somewhat worn and white from the long disability.

The knee reflexes were normal, and there was no disturbance of sensation in the feet or legs. The bladder and rectum were normal. His general aspect, so far as movement went, was that of a case of severe lumbar Pott's disease and psoas abscess.

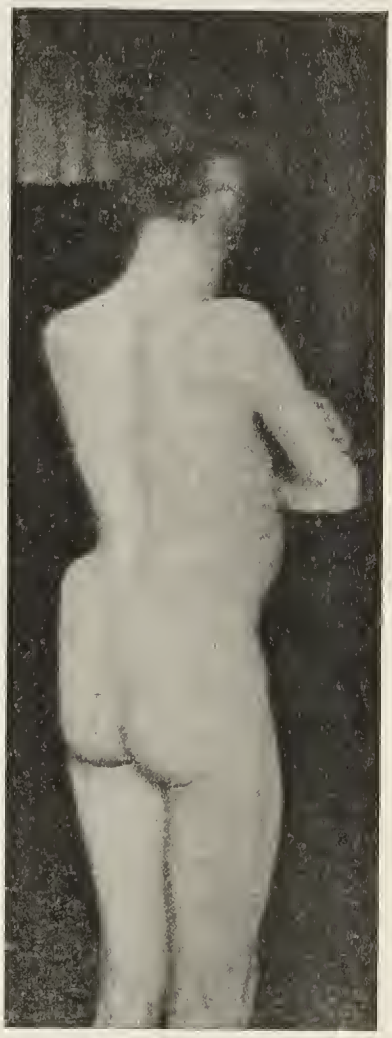

Fig. 8.

What attracted my attention was the sharp prominence of the iliac bones backward, the very marked lordosis in the lumbar region, and the shortening of the trunk. The shape of the hips was strongly suggestive of double congenital hip dislocation, but the trochanters were on Nélaton's line.

It could easily be felt in examining the spine that between the sacrum and the lumbar spine there was a sharp difference, the lumbar spine being further forward than it should be and the upper part of the sacrum apparently being in the normal place.

The provisional diagnosis of spondylolisthesis was made, and, as it was evident that there was much pain in motion and that the vertebral articulations were in a state of much irritability, a plaster jacket was advised and was applied under suspension. On being let down on to his feet the patient stood better and experienced a feeling of relief.

He returned at intervals of two months for jackets, and in February, 1897, was given a laced jacket and told to remove it at night.

On April 22, 1897 (a year after the accident), he was again examined and was discharged from treatment, as all symptoms of irritation had disappeared. The lateral curvature, as can be seen from the picture, had almost entirely disappeared. The left crest of the ilium is a little more prominent than the other. The deformity of the lumbar spine remains, but is apparently less marked than before.

Lateral flexion of the trunk with the arms behind the head is not normal, but perhaps to within two thirds of the normal limit.

In standing with knees straight he can bend over until the tips of his fingers are twenty inches from the floor. No motions are painful.

With the pelvis flexed and the arms behind the head right and left torsion of the trunk are about one half of normal. He can lie on a table and touch both knees without arching the spine. The walk is not perceptibly bad with the clothes on and there is absolutely no pain.

He is able to go without the jacket a good part of the day, and expressed himself as conscious of no disability from the accident.

The case is reported at some length, as I was at a loss to know on what line to proceed. As the symptoms presented were very much like those in lumbar Pott's disease, it seemed to me best to quiet any irritation which might exist there, and this I did by the plaster-of-Paris jacket, as it offered the most perfect fixation.

I gave, however, a very guarded prognosis, thinking that permanent disability would result, and I was very much surprised at the good recovery on fixation and the disappearance of notable disability, although the characteristic deformity was but little diminished.

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THE
SERUM DIAGNOSIS OF ENTERIC FEVER BY THE DRIED BLOOD METHOD.

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[From the Pathological Laboratory of the Jefferson Medical College Hospital, May, 1897.]

In order to appreciate the announcement made by Fernand Widal, in June, 1896, that the diagnosis of enteric fever could be made from the peculiar reaction which resulted from the mixture of the blood serum from an individual having this disease with a pure culture of the bacillus of Eberth, brief reference must be made to the "specific reaction" of Richard Pfeiffer, upon the principle of which the whole question of serodiagnosis is based. This observer, during the course of his work on the production of cholera immunity, in 1894, noted that the vibrios of Asiatic cholera, when mixed with the blood serum of an animal immune to this disease and injected into the peritoneal cavity of a healthy, non-immune animal, showed, by microscopic examination, changes consisting in a marked alteration in their morphology, a loss of their characteristic motility, a tendency to clump together in masses, and, finally, a complete dissolution of the micro-organisms. Later in the same year, together with W. Kolle, he also observed similar phenomena in experiments with the typhoid bacillus and the serum of animals rendered immune to typhoid fever; and it was subsequently found that, inasmuch as other vibrios were unacted upon by cholera serum, and that colon bacilli were unaffected by the serum of an animal immune to typhoid, the reaction, which was of a specific nature, was a valuable means of laboratory differentiation, and as such they emphasized it. Pfeiffer and Kolle then showed that the reaction occurred as satisfactorily in a test tube as in the peritonæum of an animal; this they proved by the inoculation with a pure culture of the typhoid bacillus of a test tube containing neutral bouillon mixed with either the blood serum from an animal immune to typhoid or from a patient suffering from the disease; and by the similar inoculation of a test tube containing the blood serum from an animal which had not been immunized. After a few hours' incubation at 37° C., the first tube was seen to contain a whitish sediment, with a clearing of the upper portion of the fluid, while the tube containing the blood from the non-immune animal showed a uniform cloudiness throughout; this contrast between the tube containing the typhoid serum and the one having in it the normal serum being marked.

In connection with Pfeiffer's statements it is interesting to recall the observations made by Charrin and Roger, in 1889, upon the agglutinative action produced upon the *Bacillus pyocyaneus* by the fluids of animals which had been injected with cultures of this microorganism; similar statements by Issaeff and Ivánoff, in 1894, relating to a vibrio described by the latter investigator; and the fact that Bordet, in 1889, found that a peculiar effect was exerted on the germs of cholera by the fluids of animals vaccinated with devitalized cholera vibrios.

Max Grüber and Herbert E. Durham, in 1896, reported valuable contributions on the laboratory diagnosis particularly of the typhoid and the colon bacillus by the serum method, and showed its uses as a test for the potency of a given serum and as an indication of the virulence of a given germ. They conducted the reaction *in vitro*, applied the principle of Pfeiffer's reaction to many other motile micro-organisms, gave their deductions regarding its application to non-motile bacteria, and announced that the reaction occurred with the typhoid bacillus and the blood serum of persons having recently recovered from enteric fever. In no instance did they find that typhoid serum had any effect upon the colon bacillus. To the specific substance causing the characteristic clumping Grüber gave the name "agglutinin."

In June, 1896, Fernand Widal announced to the Medical Society of the Paris Hospitals that typhoid fever might be diagnosticated by observing both macroscopically and microscopically the changes produced on a culture of the typhoid bacillus by the blood serum from a case of enteric fever, described in detail the methods by which this reaction was obtained, and demonstrated its value as a diagnostic sign in this disease. He described several methods of conducting the test. One process consisted of introducing into a test tube containing ten parts of sterile bouillon one part of serum from a suspected case, inoculating the tube with a culture of the typhoid bacillus, incubating it at 37° C., and noting if a precipitate, composed of immobile clumps of bacilli, with clearing of the supernatant fluid in the tube, occurred within twenty-four hours. Another method required the addition of one part of serum to a tube containing ten parts of a cloudy bouillon culture of the typhoid bacillus, observing after a few hours whether a precipitate formed, leaving the upper part of the fluid in the tube clear. A third method, and one that Widal preferred for general practice, was that of adding one drop of serum or of blood to ten drops of a young culture of typhoid bacilli, and observing immediately under the microscope the formation of heaps or agglomerations of the bacilli, and the loss of motility of the bacteria. He also said that the reaction might be obtained by the use of dried blood as well as by serum, but the latter is the more preferable method, he leads one to infer. For the test-tube reactions Widal aspirated the blood from a vein in the arm; but for the third method, conducted as a hanging drop in a concave slide, he obtained the blood from a finger by puncture. Chantemesse and a number of other French observers soon applied the test in a large variety of other diseases, among which were pneumonia, erysipelas, peritonitis, and influenza, and found that these conditions produced no agglutinative action whatever upon the Eberth bacillus, thus offering valuable negative evidence toward the worth of the test.

Apropos of the importance which attaches to Widal's communication, the highest credit must be given to Albert S. Grünbaum for his large share in the development of this important subject, and attention must be paid to the fact that this investigator carried on the same work with which Widal's name is associated independently of the latter. Grünbaum, in the fall of 1896, after making the general statement that "if a drop of an emulsion of a motile pathogenic organism be mixed with a drop of serum of an animal immunized against this particular bacillus, the micro-organisms collect together in clumps and lose their motility," goes on to state that the serum from a case of typhoid fever, diluted sixteen times, causes distinct agglutinative action on the germ of this disease within thirty minutes, and then quotes cases to corroborate the correctness of his assertion. Two months later, in reply to a critical note in the *Lancet* from Widal, Grünbaum further claims to have employed a method like that of Widal's three months before the latter's announcement, and adds that this was reported by Grüber (in whose laboratory the reaction was noticed) to the Medical Congress at Wiesbaden, in April, 1896, who pointed out that under certain conditions of definite dilution the reaction might serve for purposes of clinical as well as laboratory diagnosis.

From this *résumé* of the more important steps in the evolution of the serum test it would appear that to no one observer is due the whole credit, but that by the concerted efforts of a number of investigators has the present status of the reaction been reached. Another step, and one that particularly concerns the work reported in this article, was taken by Wyatt Johnston, when he advocated the use of dried blood instead of serum, and to him, more than to any one else, are we indebted for a simplicity of technique which makes the test applicable to wide clinical employment. In Johnston's first communication on the subject, read before the American Public Health Association, in September, 1896, he says: "As the reaction appeared to depend probably upon the presence of some substance analogous to the ordinary toxines, and as many of these preserve their characteristics in a dry state, it naturally occurred to me that this might be true of the substances producing the serum reaction. The advantage of being able to operate with a dried substance was obvious, especially with reference to the possible application of the method to the rapid bacteriological diagnosis of typhoid fever in municipal laboratories, just as is now done in the case of diphtheria, and my observations have been made with this end in view. Instead of taking the serum as soon as it exuded, I allowed the drop to dry, and found that upon moistening it subsequently the solution obtained was just as efficacious as pure serum for the diagnostic purposes of the test." Instead of the more complicated method of collecting the blood in capillary tubes, and using the serum in certain definite dilutions, as practised by the English and Continental workers, Johnston directs that samples of blood from suspected cases be collected on slips of ordinary cardboard, which have been disinfected by formalin and placed in sterile envelopes, by which means they may be sent any distance for examination. Having dissolved the drop of dried blood with a drop of germ-free water, a drop of this solution is mixed with a like quantity of typhoid bouillon or with an emulsion of the germ in sterile water, and a minute portion of the mixture is placed upon a cover glass, inverted over a concave slide, and examined as a hanging drop with a quarter-inch dry objective. The technique of the test was thus much simplified, with as good results, Johnston claimed, as when the serum was employed. If the blood be from a case of enteric fever, the clumping and immobilization of the bacilli may be readily watched under the microscope, the reaction taking place either immediately, or after the lapse of a variable length of time, in some instances amounting to twenty-four hours. But, after more extensive investigation of the test, it was found that certain partial and pseudo-reactions with the dried blood of healthy individuals occasionally took place, and as these false reactions were not noticed in his earlier work, when he used attenuated cultures, Johnston therefore attributed them to the virulence of the cultures used, and recommended that the culture employed for the test be one of from twelve to twenty-four hours old, grown on neutral bouillon from an old stock culture of the organism. With this precaution he found that these pseudo-reactions did not occur. During the time which has elapsed since the introduction of the dried-blood method of serum diagnosis into this country, series of cases have been reported by Greene, Bloch, McKenzie, Appel and Thornbury, Biggs and Park, Elsberg, Brannan, Bracken, and others, including further work by Johnston and McTaggart, while, on the Continent, Pick has carefully studied the method. The results obtained by these observers are tabulated below.

*Table Showing the Results obtained by the Dried-Blood Method of the Serum Test in Enteric Fever and in other Diseases.**

OBSERVER.	ENTERIC FEVER.					OTHER DISEASES.			
	Cases.	Positive.	Negative.	Per cent. positive.	Day of disease.	Cases.	Positive.	Negative.	Per cent. positive.
Abbott	68	66	2	97·1	....	..	..	..	....
Appel and Thornbury.	50	50	0	100·0	As early as 3d.	25	† 1	24	4·0
Bartlett	12	10	2	83·3	....	18	0	18	0·0
Biggs and Park (*N. Y. B. of H. Report*).	140	100	40	71·4	3d–2d month.	200	4	196	2·0
Bloch	17	9	8	52·9	As early as 3d.	..	..	..	....
Bracken	29	25	4	86·2	4th–94th.	16	0	16	0·0
Brannan	‡ 9	8	1	88·8	8th–29th.	..	..	..	....
Craig	9	9	0	100·0	3d–convalescence.	12	0	12	0·0
Da Costa	102	95	7	93·1	4th–51st.	116	4	112	3·4
Elsberg	# 55	53	2	96·4	4th–32d.	148	1	147	0·67
Gehrmann and Wynkoop (*Chicago B. of H. Report*).	57	52	5	91·2	....	△	..	..	....
Greene	27	27	0	100·0	4th–72d.	33	0	33	0·0
Johnston	13	13	0	100·0	....	13	0	13	0·0
Johnston and McTaggart (*Province of Quebec B. of H. Report*).	129	123	6	95·3	2d–60th.	33	0	33	0·0
Le Fevre	10	9	1	90·0	3d–45th.	115	3	112	2·6
Loomis	15	15	0	100·0	Until 4th month.	10	0	10	0·0
McKenzie	61	57	4	93·4	....	21	0	21	0·0
Park	34	33	1	97·1	....	14	0	14	0·0
Reed	22	22	0	100·0	....	6	0	6	0·0
Thomas	28	24	4	85·7	6th–convalescence.	20	3	17	15·0
Ullman and Woehnert.	19	19	0	100·0	4th–convalesce	9	0	9	0·0
	90·4 per cent. positive in 906 cases.					1·97 per cent. positive in 809 cases.			

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* Cases tested by the liquid blood and serum methods, reported by the British and Continental observers, and in America by Bloch, Cabot, Dupaquier and Pothier, and Shattuck, have not been included in this table. Blanks under "Day of Disease," and "Other Diseases" indicate in such instances too great indefiniteness of the author to whom reference is made to justify positive statements, or that no note is made. Results stated as "pseudo-reactions" or "partial" reactions are considered as negative.

† Also, "at times we obtained from apparently normal blood . . . and miscellaneous affections an unmistakable reaction, resembling that of typhoid blood."

‡ Positive results, in addition, with five cases convalescent from three to ten months, and two negative reactions from two convalescents of five and sixteen months each.

# Personal communication.

△ "Typical pseudo-reactions in eight cases of pneumonia, and in one case of bronchitis and pleurisy. Numerous pseudo-reactions." Total of 158 cases, including 57 of typhoid, tested, yielding 99 typhoid reactions.

The substances to which the reaction is due—"paralysin" (Pfeiffer), alexin and antitoxine (Behring), lysogens (Fraenkel), and "agglutinin" (Grüber)—have been studied by Widal, Achard, Bensaude, Dieulafoy, and others;

the agglutinative principle having been proved to exist in the globulin and the fibrin of the blood, and not in the albumin, its absence after the separation of these substances having been conclusively demonstrated. It has also been noted that these substances, which are markedly increased in the serum of persons having or convalescing from enteric fever, are present in much greater intensity in the " whole " blood than in the serum alone. Grüber believes that the " agglutinin," by its destructive action on the limiting membrane of the typhoid bacillus, allows access to the inner structure of the bacterium by the alexins; while Pfeiffer and Kolle, on the other hand, have apparently shown that the lysogenic properties of the serum are not lost after the separation of the " agglutinin."

That the reaction may be produced by the various secretions of the body, as well as by the blood, in enteric fever, has also been shown by the observations of the French writers above referred to, for the phenomenon has been seen to occur with the lacrymal secretion, with serum from blisters, with pus, with urine, and with the milk of a nursing woman. Appel and Thornbury have obtained the reaction with the blood of a hen and of a rabbit, but they failed to see it when the bloods of a number of other animals were tested; these authors also verify Bordet's observation, as do Johnston and McTaggart, that results indistinguishable from those produced by typhoid blood are met with when horses' blood is added to typhoid bouillon, but that the blood from these animals also causes clumping and granulation of the colon bacillus. As the result of seven autopsies on cases dead of enteric fever, Courmont found that the bile, mesenteric juices, and blood from the liver and spleen often gave no reaction, and always a much less intense reaction than that produced by blood from the heart, the lung, the kidney, the thyreoid gland, and the ovary; he also noted that fluids from serous cavities, particularly when there was an acute effusion due to other germs, produced very intense and marked reactions.

In the cases included in this report the blood was obtained from the finger by puncture, and three separate drops allowed to fall on the surface of a clean glass slide, which was labeled, and placed in a slide box to await subsequent examination. That the dried blood preserves its agglutinative properties for a long while is shown by the immediate and typical reactions which were seen in two cases of my series, which were purposely kept for eighty-six days before examination, without special care against contamination. Johnston first showed this fact by obtaining typical reactions with specimens of dried blood sixty days old. Although in my earlier cases exact precautions were taken to insure asepsis both of the blood drop, of the finger from which the blood was drawn, and of the glass slides and their receptacle, procedures other than the cleaning of the finger and of the slide with alcohol, and the passage of the slide through a flame just before use, have been proved by experience to be needless.

To one of the dried blood-drops on the slide one drop of sterile distilled water is added from a pipette, and a solution of the blood is thus effected in a few minutes. From a second pipette, containing twenty-four-hours-old typhoid bouillon, six drops are now placed upon a sterile cover glass, and to this is added a drop taken from the summit of the blood solution with a platinum loop eight millimetres in diameter, and after mixing together the blood and typhoid bouillon, a minute portion is placed on the centre of a sterile cover glass, which is inverted over a concave slide, sealed with cedar oil, and examined as a hanging drop with a one-eighth-inch dry objective. In cases which appear at all doubtful, a " control " slide with normal blood is useful for comparison between the specimen in question and the actively motile bacilli which are seen in the former. The use of pipettes instead of platinum loops, as suggested by Johnston and by Delépine, insures great accuracy in dilution, and saves a great amount of time in conducting a large number of tests. The pipettes which I use in this work are made of heavy glass tubing, measuring five millimetres in diameter by twenty-two centimetres in length, and have a central circular expansion holding about twelve cubic centimetres. One end is drawn out to a fine point, which, by means of gentle pressure on a rubber cap at the other end of the tube and separated from its contents by a plug of cotton, delivers drops quite accurately approximating two minims.

The culture employed in my experiments was originally obtained through the kindness of Dr. Wyatt Johnston, of the board of health of the Province of Quebec. Daily transplantations from twenty-days-old agar cultures were made into neutral bouillon, and these twenty-four-hour-old cultures used in the tests. Absolute purity of the culture is, of course, an essential for the proper conduct of the test, and the one used in my work responded typically to the usual tests for the purity of the typhoid bacillus.

If the reaction is a positive one, in a certain number of cases it takes place immediately, and as soon as the hanging drop is brought into focus one may observe large masses of motionless, agglutinated bacilli separated by open spaces, in which may be made out a few isolated bacteria, whose motility is decidedly inhibited and enfeebled, or wholly lost. After a lapse of time the bacteria may become distorted and granular in appearance, and in some specimens are seen to change into indistinct masses, devoid of contour and definiteness.

In other instances some time must elapse before one can arrive at a definite opinion as to the outcome of the test, and it is in these cases that the formation of the clumps, from their inception out of two or three bacilli to their completion, when they consist of many hundred organisms glued together into a motionless mass, may be most advantageously studied. In these slower reactions, while early clumping may progress to some degree, motility between the bacterial masses persists for a variable time, gradually growing less and less until, with more or less impaired motility, the bacilli are seen to approach the clumps already formed, either becoming joined to them at first approach, or, as is the case with the more active micro-organisms, circling around their peripheries for a moment and then wandering off across the field to other masses of bacteria, with one of which they are ultimately incorporated. Still other positive reactions are characterized by an almost entire cessation of motility at first, followed by tardy clump formation, consisting usually of masses of less size than are noticed when the reaction is prompt and immediate.

If the reaction is negative, the motility of the bacilli is unchanged, and agglutination is not observed, regardless of the time during which the specimen is watched. Not unless clump formation is marked and entire loss of motility exists may a reaction be declared positive; and those experiments which result in the formation of small clumps of more or less motile bacteria, with persistent motility in other parts of the field, can not be classed as typical in any sense. The time required for a reaction to occur varies, but it has been found that typhoid blood will, in the great majority of cases, cause definite clump formation and loss of motility of the typhoid bacillus within thirty minutes, although now and then a case will be met with which requires longer observation. Of the ninety-five positive reactions, eighty-one took place within thirty minutes, of which number thirty-three occurred immediately; while fourteen reactions required longer than half an hour, of which five were not complete until the lapse of an hour or more.

The two hundred and forty-five cases of all kinds which I have tested by the dried-blood method may be conveniently classed into cases of enteric fever, diseases other than enteric fever, and normal blood. This classification is in some respects entirely arbitrary, and does not represent the conditions existing at the time of the examination of many of the blood samples, as in a large number of the cases the clinical histories were unknown to me until after the examinations were made. The typhoid cases tested, with two exceptions, and also many of the other cases, were hospital patients so situated that every facility was offered for clinical study, thus reducing to a minimum errors in diagnosis. For cordial cooperation in my work I am indebted to Dr. J. C. Wilson and Dr. L. Wolff, of the medical staff of the German Hospital; to Dr. Morris J. Lewis, of the Pennsylvania Hospital staff; and to Dr. A. A. Stevens, physician to St. Agnes's Hospital. I desire also to express my thanks to Dr. F. J. Kalteyer, resident physician in the German Hospital, who has kindly furnished me with the histories and clinical notes of the cases in this institution; to Dr. Woods and Dr. Henry, internes in the Pennsylvania Hospital; and to Dr. Long, of the house staff of St. Agnes's Hospital.

Enteric Fever Cases.—The blood from one hundred and two cases of enteric fever, either actively developed in its early stages or during convalescence, has been tested, of which number positive reactions were obtained in ninety-five instances, while seven gave negative results. Of the latter, although partial reactions, such as feeble and incomplete clumping and decreased motility were observed, in none could the reaction be called typical. Failures to obtain the reaction were met with in one case during the fourth day of the disease, in two cases on the tenth day, in one case on the twelfth day, in one case on the twenty-ninth day, and in two cases during convalescence, on the thirty-eighth and fifty-first days respectively.

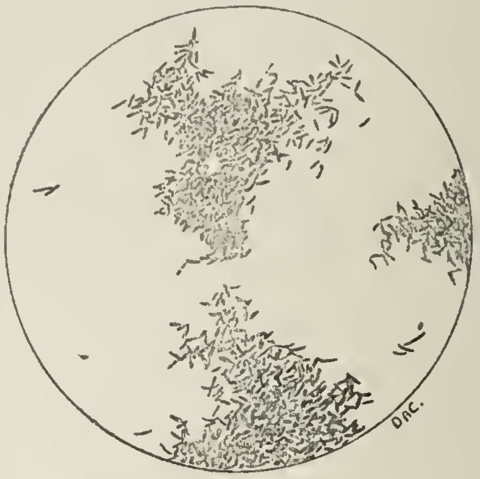

Fig. 1.—A positive reaction. Enteric fever cases. Large clumps of motionless bacilli separated by open spaces. The few bacteria outside the clumps are devoid of motility.

The earliest period of the disease at which a positive reaction was seen was the fourth day, three out of four cases of this stage of the fever giving positive results, while all of six cases on the seventh day were positive. The latest day of the disease giving the reaction was the fifty-first. No attempts, however, were made to ascertain the persistence of the reaction in any of the cases tested.

As much of the value of the test depends upon its appearance in the early stages of the disease, it is important to determine, if possible, how early the reaction may be elicited, and in what percentage of cases. This is shown in the summary given below, of the time of the appearance of the reaction by weeks, although it must be remembered that, as the determination of the exact day of the disease is impossible in many instances, these re-

Day of Disease.	No of cases.	Positive results.	Negative results.	Percentage of positive results.
Fourth to seventh	14	13	1	92·8
Eighth to fourteenth	39	36	3	92·3
Fifteenth to twenty-first	24	24	0	100·0
Twenty-second to twenty-eighth	8	8	0	100·0
Twenty-ninth to thirty-fifth	8	7	1	87·5
Thirty-sixth to forty-second	5	4	1	80·0
Forty-third	1	1	0	100·0
Fiftieth	1	1	0	100·0
Fifty-first	2	1	1	50·0
	102 93·1%	95	7	

sults must necessarily be considered as more or less inaccurate.

Of one hundred and eight cases analyzed by Biggs and Park, from the third to the seventh day, sixty-three per cent. gave positive results; during the second week, fifty-nine per cent.; during the third week, seventy-nine per cent.; and during the fourth week, eighty-eight per cent. Elsberg studied thirty-six cases of his series with a view to determining the appearance of the reaction according to the week of the fever, and found that while in eighty-six per cent. of the cases examined the reaction appeared before the end of the second week, in but eight per cent. did he obtain positive results during the first week; in fourteen per cent. of his cases the reaction occurred after the fourteenth day. From the above results, varying so widely, it is evident that the question of the time of the appearance of the reaction must still remain one about which speculation must exist.

Attempts to establish definite relations between the day of the disease, the severity of the attack, and the rapidity and intensity of the reaction have not led to very satisfactory conclusions. While it is true that the majority of very acute cases give, as a rule, immediate and marked positive reactions, it has also been noted that just as intense reactions are seen when the bloods of milder cases and convalescents are tested.

From an analysis of these cases it would seem that a fairly constant relation exists between the time required for a positive reaction to occur and the size of the clumps formed, large-sized clumps having been observed in thirty-one out of the thirty-three immediate reactions; but that large clumps are not peculiar to rapid reactions is also shown by the fact that they are apt to be seen in those experiments which require for their completion the lapse of a considerable length of time. When one further remembers that an important factor in the size of the clumps lies in the numerical richness in bacilli of the bouillon employed for the test, and as this widely varies, irrespective of the dilution of the blood by bulk with bouillon, conclusions concerning this point must of necessity rest upon an extremely inconstant basis for reasoning.

In addition to the cases referred to above, two other blood samples were examined. The first was from an individual who had recovered eleven months previously from a severe and prolonged attack of enteric fever, but who was in good health at the time the blood sample was obtained. The blood from this case still exerted a marked agglutinative action on the typhoid bacillus, but motility was but slightly inhibited until after the lapse of a half hour's time, when it was abolished. The second sample was the blood of a fœtus of a woman who aborted on the eleventh day of typhoid. A negative reaction was obtained from the fœtal blood, although the test was positive with the blood of the mother. The fœtus had reached about the thirty-second week of intra-uterine development, and the blood was taken from the heart immediately after this organ ceased beating, an hour after delivery; the placental blood, through an oversight on the part of a nurse, was not obtained. In connection with this last instance it is interesting to note the failures of Etienne, and of Charrier and Apert, to observe positive reactions with fœtal blood, although the latter obtained such with blood from the placenta of a woman having typhoid. Griffith has recently reported a positive reaction in a seven-weeks-old infant, born at term during the third week of its mother's illness with enteric fever, and he quotes a like result recorded by Chambrelent and Saint Phillipe. Mossé found that the reaction was present in the placental blood and in the blood of a new-born infant whose mother had suffered from enteric fever three months before its birth.

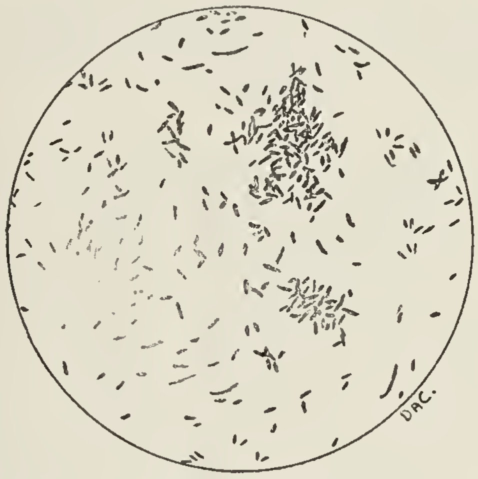

Fig. 2.—A pseudo-reaction. Diseases other than enteric fever. A few small clumps of bacilli having impaired motility. Persistent motility of the bacteria in other parts of the field.

Diseases other than Enteric Fever.—In the examination of the blood of one hundred and sixteen individuals suffering from diseases other than enteric fever, positive reactions were obtained in four instances. The reactions in these cases were unmistakably similar to those encountered with typhoid serum and typhoid cultures, and occurred in each instance with such promptness that no doubt could exist as to the genuineness of the reaction.

In the first instance, a case of severe valvular lesion of the heart complicated with much failure in compensation, the phenomena of clump formation and abolished motility took place within ten minutes; the patient, an intelligent man, said that he had never had typhoid at any time in his life, and that the only acute illness from which he had ever suffered was an attack of rheumatic fever during early childhood. Nine cases of valvular heart disease were examined in all, with negative results, with this exception. The second positive reaction was seen with the blood of a case of croupous pneumonia, and was entirely indistinguishable from that produced by typhoid serum upon the typhoid bacillus; in this case, however, it was impossible to exclude the history of a previous attack of enteric fever, as the patient, who was an ignorant Pole, unable to understand English, could give no tangible account of his previous illnesses. Having found this undoubted reaction in pneumonia, and realizing the importance of determining whether it appears with any constancy in this condition, I examined many more cases of this disease (twenty-seven in all were tested), with negative results in every instance except one, in which a typical positive reaction was seen; this patient did not give a history of enteric fever in previous years. In four of the pneumonias examined small masses of agglutinated bacilli and a decrease in the motility of the free bacteria were noticed, but not sufficiently marked to justify the opinion of positive reactions. The other case giving a positive result was one of angeio-neurotic œdema having a temperature of 106° F. at the time the blood sample was procured, and without a history of having had enteric fever. The reaction in this case occurred immediately. Apropos of the observations of Biggs and Park and Brannan concerning positive reactions with the blood of negroes not having typhoid, it may be stated that none of the above cases were of this race.

Negative reactions were met with in a number of diseases with which enteric fever, in its early stages at least, may be confounded, and such results possess a certain value in the diagnosis of a doubtful fever with more or less masked symptoms. Failures to obtain positive reactions in some of the cases examined, notably in four cases of acute intestinal diseases, in two cases of meningitis, and in one case each of simple continued fever, ulcerative endocarditis, and acute miliary tuberculosis, were material aids in the clinical diagnosis of the conditions in question. I may also report that a second case of acute miliary tuberculosis, presenting doubtful clinical features, and which was tested by Dr. Booth, resident physician in the Episcopal Hospital, also reacted negatively. The diagnosis in both cases was confirmed by post-mortem examinations.

Positive reactions have been reported in otitis, by Stern; in diabetes mellitus and in pernicious malaria, by Bloch; in phthisis, in rheumatism, and in malaria, by Thomas; in meningitis, by Jez; in jaundice cases, by Grünbaum; in septicæmia, by Ferrand; in hepatic cirrhosis, in puerperal sepsis, and in diabetes mellitus, by Brannan; in influenza, by Appel and Thornbury; in bronchitis and in pleurisy, by Gehrmann and Wynkoop; and in acute miliary tuberculosis, by Breuer.

I have examined the blood from all these conditions, with the exception of pernicious malarial fever and jaundice, and have obtained negative results in all. In a number of instances several different cases of the same disease were tested—nine cases of pulmonary tuberculosis, seven of influenza, six each of septicæmia and acute bronchitis, four each of rheumatic fever and tertian malarial fever, three each of diabetes mellitus and pleural effusion, and two of meningitis.

Both Brannan and Thayer have reported cases of post-typhoid bone disease presumably due to infection with the typhoid bacillus, which reacted to the test. In a case of this nature, a young girl having a suppurative arthritis of the knee joint, due to infection by the *Bacillus typhosus*, I did not obtain a decided positive reaction, although the patient had recovered from a severe attack of enteric fever six weeks previously.

In addition to these cases, dried-blood specimens from the following conditions all gave negative reactions: Four cases of appendicitis, three of erysipelas, two each of spleno-medullary leucæmia, secondary anæmia, acute parenchymatous nephritis, and uræmia, and one each of pernicious anæmia, follicular intestinal ulceration, urethral fever, lead poisoning, catarrhal pneumonia, rheumatoid arthritis, acute gout, rötheln, purpura hæmorrhagica, and gastric ulcer.

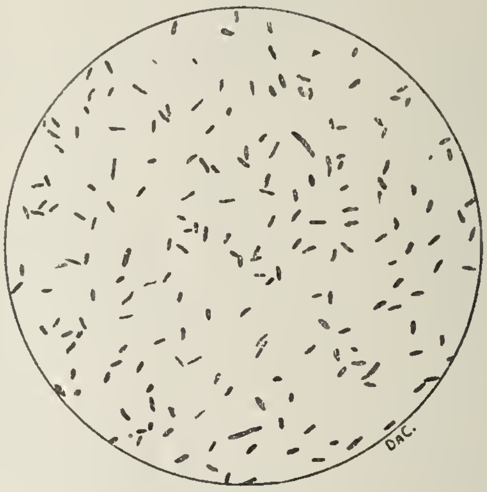

Fig. 3.—Bacillus typhi abdominalis. Normal blood. The bacilli are actively motile throughout the field.

Normal Blood.—In twenty-five specimens of blood from as many members of a class in the Jefferson Medical College no positive reactions were noted. Two of the students whose blood was examined stated that they had had enteric fever, one five years ago, and the other during early adolescence, twenty years ago; another student gave a history of having had two years ago an illness clinically not unlike enteric fever, about the diagnosis of which he was uncertain. In addition to these, a number of other samples of normal blood were also examined with uniformly negative results; but as accurate records of these tests were not kept, other details can not be given.

It is highly improbable that in the dilution employed in all of the tests reported in this article, and with the use of a non-virulent culture of the typhoid bacillus, a positive reaction ever takes place with the blood of persons in good health and without a history of enteric fever of recent occurrence.

Before concluding this report I wish to make a note of some results concerning the action of the blood of septic cases of appendicitis upon the colon bacillus, which have been observed by Dr. Kalteyer and myself. Following the dictum laid down by Durham and Grüber, that specimens of serum of various motile organisms react to a pure culture of the particular organism against which the serum in question is immunized, we have applied the principle of Pfeiffer's reaction in four cases of septicæmia occurring in appendicitis, in which the infection was proved to be due to the colon bacillus. By the addition of blood from these cases to a twenty-four-hour-old broth culture of the *Bacillus coli communis,* in every instance we observed agglutination and stoppage of motility of the bacilli. Blood samples were also tested with cultures of the typhoid bacillus, with no effect upon this organism. In relation to this last statement, it should be mentioned that Johnston and McTaggart have noticed frequent reactions between colon cultures and the blood of patients with a "stepladder" temperature and symptoms of enteric fever, but failing to react to the serum test for typhoid. Achard and Chantemesse have found that colon cultures are unacted upon by typhoid serum; while, on the other hand, Courmont and Rodet declare that the reverse is the result of their observations.

The clinical importance, if any, of this reaction and its ultimate worth as a diagnostic sign in obscure cases of appendicitis, and in colon infections in general, is as yet undetermined; but we hope, after further investigation, to be in a position to either contradict or to confirm its usefulness.

In conclusion, the reliability, from a clinical standpoint, of the dried-blood method of the serum diagnosis of enteric fever must be determined. To the clinician comparisons are naturally suggested between this test and the diazo reaction of Ehrlich, the Elsner method of isolating the bacillus of Eberth from the stools, and the culture of this organism from the blood, the urine, and the spleen; and from his point of view it may be said that the serum test promises far better results in the diagnosis of enteric fever than have been obtained by any of these other methods, although it may not be claimed that it is an absolutely diagnostic sign of the disease. The certain proportion of cases of undoubted typhoid in which the test fails; the instances, infrequent though they may be, of positive reactions in diseases other than typhoid; its occasional persistence for long intervals after convalescence from enteric fever; and the transient nature of the reaction during the course of the disease, all militate against the acceptance of the test as a conclusive indication of enteric fever.

From the cases embraced in this report it may be concluded that

In more than ninety per cent. of cases of enteric fever a positive reaction may be obtained.

In more than ninety per cent. of cases examined from the fourth to the seventh days of the disease inclusive, a positive reaction may be obtained.

In more than three per cent. of diseases other than enteric fever reactions are produced which are indistinguishable from typical typhoid reactions.

Positive reactions are occasionally met with in individuals who have had enteric fever some months previously, but who are in good health at the time of the examination.

Negative reactions are obtained with the blood of healthy persons who have not had enteric fever recently.

Typhoid blood which has been kept in a dried state for eighty-six days will produce a typical reaction.

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CASE OF PULMONARY GANGRENE FOLLOWING PNEUMONIA.

RECOVERY WITHOUT OPERATION.

By HENRY M. FISHER, M. D.,
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Nicholas M., aged thirty-nine years, married, born in Italy, stated that he had always had good health, with the exception of an attack of typhoid fever four years before, until the summer of 1896, when he had suffered from tertian intermittent.

Present illness began about October 1, 1896, when, after exposure, he had a chill, followed by fever, cough, and sharp pains in his right side, increased by deep inspiration.

The signs, when I first saw him, were those of a congestion over an area of not more than six inches in diameter at the back of the right lung, involving the lower portion of the upper and the middle lobe. Over this area there was some dullness on percussion and a few crepitant râles were heard. His sputa were thick and tenacious and somewhat rusty.

Upon his admission to the Episcopal Hospital, two days later, the area of percussion dullness was found to have increased, and tubular breathing was heard over the upper portion of this dull area. His pulse was then 94; temperature, 102.4°; respirations, 32; urine highly albuminous—about fifteen per cent. by volume—and contained granular and hyaline casts.

October 15th.—Tubular breathing heard over a more extended area and free sweating.

16th.—Free muco-purulent expectoration, and sputa have a distinctly gangrenous odor. Bronchial breathing now distinctly heard over the lower two thirds of the right back. Very free perspiration. Ordered eucalyptol by inhalation every three hours.

19th.—The breathing at the junction of the upper and middle thirds of the right lung posteriorly is to-day distinctly amphoric, and at this point pectoriloquy is also heard. Believing that the signs and symptoms pointed to a localized gangrene of the lung, I consulted Dr. R. H. Harte, surgeon to the hospital, as to the propriety of incising the lung, and of attempting to drain and disinfect the abscess cavity. As it was impossible, however, to determine the depth to which the lung would have to be incised in order to reach the cavity, the risk seemed to be too great to justify any operation. The patient's temperature for the last few days shows marked exacerbations and remissions, and he has also very profuse and exhausting sweats.

For the relief of this latter symptom camphoric acid was ordered.

21st.—Examination of the sputa shows the presence of tubercle bacilli, but no elastic tissue. Ordered five to thirty drops of creosote carbonate three times a day.

25th.—Urine still shows a trace of albumin and some hyaline and granular casts.

November 6th.—Expectoration still very profuse, and the sputum is still gangrenous in odor.

23d.—Patient feels much better, expectoration less, and the offensive odor is disappearing. Almost complete dullness on percussion from the midscapular region to the base of the chest.

24th.—Temperature normal to-day for the first time.

December 2d.—Expectoration scantier and gangrenous odor disappearing.

15th.—Patient up and about. Cough and expectoration almost disappeared, and the dull area over the back of the lung has markedly diminished.

May 28, 1897.—Patient called at my office to-day, having left the hospital a few days ago. For the last three or four months he has been helping with the work in the ward.

Pulmonary resonance is now perfect over the whole right lung, and breath sounds are everywhere absolutely normal.

Patient expects to return to his family in Italy tomorrow.

The condition of the patient for some weeks last autumn was such that I had very little hope of his recovery. The gangrenous-smelling sputa, the hectic temperature, and the exhausting sweats made me fear that it would be impossible to prevent a fatal termination from the absorption of the infectious material within the lung. I am inclined to think that the inhalations of eucalyptol and the administration of the carbonate of creosote were both of great use in helping to clear his blood of the products of septic inflammation.

A SIX-INCH HAT PIN IN THE MALE URETHRA.

By PHILIP D. BUNCE, M. D.,
HARTFORD, CONN.

R. T., forty-five years old, and the father of a family, came in considerable distress and gave me the following history. About two hours ago, having considerable itching about the penis, he had taken one of his wife's hat pins and obtained relief by pushing it head first into the urethra. In some way, which he could not explain, the pin slipped out of his fingers and went out of sight up the urethra. It had been necessary for him to walk quite a distance, and every step caused him pain.

On examination two drops of blood were seen on his shirt. The penis was in a state of semi-erection. The pin could be easily palpated, the head in the deep urethra, and the point about two inches from the end of the penis. An unsuccessful attempt was made to remove the pin, under cocaine, by passing narrow-bladed forceps through the meatus into the urethra.

One hand was now placed on the perinæum, where the pin head could be grasped, and the other hand bent the penis, so that by considerable pressure the pin point was forced through the skin, about an inch and a half from the end of the penis. The pin was now pulled out as far as its head and, by reversing the direction, was easily pushed, so that it was delivered head first through the meatus.

The pin was of the ordinary variety, with the head of about the size of a shoe button, and measured exactly six inches in length.

The man, when seen a week later, said he had not experienced the slightest pain of any kind after removal of the pin.

Therapeutical Notes.

The Balsamic Treatment of Bronchiectasis in Children.—Molle (*Loire médicale*, May, 1897; *Journal des praticiens*, July 24, 1897) reports rapid improvement, amounting practically to a cure, in two cases by the use of the following mixture:

℞ Eucalyptol	10 parts;
Creosote	25 "
Tincture of benzoin	50 "
Copaiba	80 "
Oil of sweet almonds, enough to make	200 "

M. Thirty drops daily are given by the rectum, in a little milk, and the amount is gradually increased to one or two teaspoonfuls.

Testicular Extract in the Treatment of Psoriasis.—At a recent meeting of the Paris Academy of Sciences (*Presse médicale*, July 17, 1897) M. Guyon reported the results obtained by M. Bouffé with the use of testicle juice injected subcutaneously, in amounts progressively increased from ten to twenty cubic centimetres daily, for lengths of time averaging about three months. He had thus treated sixty-one men and twenty-two women with generalized psoriasis of long standing. Seventy-seven per cent. of them had been cured, and there had been no relapse in periods varying from two to five years.

Creosote in the Treatment of Gonorrhœa.—Asmus (*Medizinskoie Obosrenie*, 1896, No. 10; *Deutsche Medizinal-Zeitung*, 1897, No. 58) reports on fifty-eight cases of acute gonorrhœa treated successfully by him with injections of an emulsion of from two to ten parts of creosote in a thousand parts of water. The patients recovered more rapidly than under other methods of treatment, and complications were rare.

The Medicinal Treatment of Renal Lithiasis.—Mendelsohn (*Berliner klinische Wochenschrift*, 1897, No. 14; *Gazette hebdomadaire de médecine et de chirurgie*, July 25, 1897) thinks that the principal indication is to dissolve and carry off the substances that are precipitated in the urine by means of diuretics. The efficacy of the lithinc treatment, he says, lies not in the solvent action of the drug, but in its diuretic effect. The second indication is dietetic; articles of food that are rich in nuclein should be avoided, for they favor the formation of uric acid in the system.

The Associated Use of Cocaine and Eucaine.—Hackenbruch (cited in the *Wiener medizinische Blätter* for July 22d) recommends the use of a solution of equal parts of cocaine hydrochloride and eucaine hydrochloride as a local anæsthetic. The combination, he says, is not less efficient than cocaine alone, and it is less poisonous.

Arsenic in the Treatment of Epithelial Cancer.—Cerny and Frunecek are credited in the *Journal de médecine de Paris* for July 25th with thus formulating a radical treatment of epithelial cancer:

℞ Powdered arsenous acid	1 part;
Alcohol, Distilled water, } each	75 parts.

M.

The affected part should be carefully cleansed, and there need be no fear of making it bleed a little; on the contrary, a little flow of blood favors the action of the application. If there is an abundant hæmorrhage, however, it should be checked before the remedy is applied. The mixture is to be shaken and, with the aid of a forceps, painted over the surface of the cancer. It should be allowed to evaporate in the open air, and then the part may be dressed lightly if necessary, but it is better to leave it without any dressing. The application causes pain, which lasts for several hours, and the formation of an eschar that, on falling, leaves a healthier surface. The cauterization is to be repeated until cicatrization takes place.

Corrosive Sublimate in the Treatment of Gonorrhœa.—The *Clinical Journal* for July 28th attributes the following formula to Vatier:

℞ Mercury bichloride	1 part;
Antipyrine	100 parts.
Distilled water	10,000 "

M. To be used as a urethral injection four times a day, the injected portion to be retained as long as possible. The antipyrine is to prevent smarting.

Airol in the Treatment of Diarrhœa.—According to the *Deutsche Medizinal-Zeitung* for July 26th, Barbagallo reports upon eleven cases of diarrhœa in adults in which he employed airol in daily amounts of from three to fourteen grains, in single doses of from a grain and a half to four grains and a half, without any unpleasant effects being produced. In recent diarrhœas its action was prompt, even without any restriction of the diet; but in cases that had lasted for some time the diet had to be regulated also.

Oil of Wintergreen in the Treatment of Zoster.—Chambard-Hénon (*Journal de médecine de Paris*, July 25, 1897) relates the case of a woman who was attacked with zoster on the nape of the neck and the upper part of the left side of the chest. It was cured in ten days by means of five applications of the remedy.

Eucaine as an Ophthalmic Anæsthetic.—De Mets (*Annales de la Société médico-chirurgicale d'Anvers*, August-September, 1896; *Deutsche Medizinal-Zeitung*, July 29, 1897) finds that anæsthesia of the eye comes on in about seven minutes after the instillation of a twenty-per-cent. solution of eucaine into the conjunctival sac, and lasts for about thirty minutes. There is no mydriasis. As poisoning may occur from the use of cocaine in the eye, this apparently non-poisonous and sterilizable substitute seems to be preferable, he thinks.

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A FRENCH CHAMPION OF GERMAN AND AMERICAN MEDICINE.

IT seems that a French physician, M. le Dr. Lasalle (de Lormont), vice-president of the Union of Medical Syndicates of France, having occasion to write of the deplorably low requirements in some of the medical schools of that country, recently wrote that, on observing them, one might occasionally fancy himself transported to Erlangen or to Philadelphia. That chivalrous writer, M. Marcel Baudouin, in the *Progrès médical* for July 17th, deprecates the employment of such comparisons and shows that they are unjustified. Matters in Erlangen and in Philadelphia, he says, are far from being as M. Lasalle supposes. If, he adds, M. Lasalle had had the opportunity of sifting on the spot the stories to which he doubtless alludes, instead of trusting to idle tales, he would perhaps have reflected before thus casting discredit on schools that are as good as the French ones.

Among the professors in the Erlangen faculty, says M. Baudouin, there are such savants as Rosenthal, the physiologist, and von Gerlach, an anatomist of the first rank; Zenker, a pathologist known to everybody who is informed concerning typhoid fever; such surgeons as Heinecke, who did the first pyloroplastic operation; such men as Frommell, the gynæcologist; and *tutti quanti*. As for Philadelphia, M. Baudouin refers to his own book, *La Médecine transatlantique*, for lists of the professors in the five schools of that city. By that book, he says, M. Lasalle may see that in Philadelphia flourishes the famous University of Pennsylvania, which has the first dental school in the world; he may see a photograph taken by M. Baudouin himself on the 10th of June, 1893, of the building of the first medical school for women established in the United States; and he may see the plan of the university. He will be able to observe at the first glance that medical teaching is as well housed in Philadelphia as in—if not Paris, at least Bordeaux. He will see a drawing of the medical school in which the teachers are such men as Duhring, the dermatologist, and J. S. Billings, the leading medical bibliographer of the world. "What more do you want?" continues M. Baudouin. "Do you think that the Americans, too, do not talk like the Méridionaux? Go and listen to them, and you will see that, for that matter, it is sometimes from the Far West that the eloquence of the Midi comes."

In this random and unfounded detraction of foreigners, says M. Baudouin, M. Lasalle is in excellent company; he is but imitating several well-known masters, in particular, M. Lucas-Championnière. The surgeon of the hospitals of Paris, he adds, did not hesitate to declare, in effect, at a full meeting of the commission on city ambulances, at the municipal council, that it was unnecessary to compare American surgeons with the释 internes of the Paris hospitals!

THE CHELIDONIUM TREATMENT OF CANCER.

ABOUT a year ago, as many of our readers probably remember, Denissenko, a Russian physician, announced that he had observed considerable benefit from the treatment of cancer with preparations of *chelidonium majus*. Two important communications on the subject have recently appeared, one, by Winter and Schmitt, in the *Centralblatt für Gynäkologie* for July 10th, and the other, by Freudenberg, in the same journal for July 31st. Winter and Schmitt make brief mention of the results obtained by some other observers before proceeding to state their own experience. Dührssen, who has used the remedy by injecting it into the tumor and applying it to the surface of the growth, has observed a slight improvement in the general condition and a little decrease of the discharge and of hæmorrhages. On the other hand, the carcinomatous growth always extended. Selenski, Bereskin, Pomeranzew, and others have seen no results from the treatment, while Kelber has observed local improvement in two out of four cases of uterine carcinoma. Denissenko himself, the authors say, has reported failures since the time of his first communication, but still believes that the drug has a certain specific action, for it makes the tumor more readily enucleable.

Winter and Schmitt have employed chelidonium in fourteen cases of uterine cancer, of which they give brief histories. Once a week they injected a quarter of a drachm of a fifty-per-cent. watery solution of Merck's extract beneath the skin of the abdomen in three or four places. In addition, they gave the extract by the mouth in daily amounts gradually increased from twenty to sixty grains. In almost every instance this internal use of the remedy was well borne, but in one case it caused slight gastric disturbance. The appetite was for the most part improved. But the subcutaneous injections were painful in the extreme. In spite of the dose being distributed over three or four places and the liquid being thrown deep into the tissue, brisk general and local reaction followed. No rise of temperature was noted, for the patients were ambulatory, but they reported that in a few hours after the injection they had severe chilliness and felt languid and depressed, so that they had to stay in bed for a few days. Immediately after the injection a very severe burning pain began in the part and lasted for a number of hours, then infiltrations formed, often larger than a walnut, which were exceedingly painful and precluded sleep for a considerable time. The skin at the site of the injection was generally very much reddened, but, out of about two hundred injections, only one gave rise to a perforating abscess. The pains subsided gradually after a number of days, but the infiltrations were noticeable for weeks and months. Massage of the part made no difference with this inflammatory reaction, and the same was true of boiling the solution before injecting it. On account of the pain, six patients wholly declined to have the treatment continued, and in only five cases could they be persuaded to allow of its being carried out thoroughly.

As for the results, in no instance was there any improvement in the tumor itself, but in many cases the infiltration made decided progress and the ulceration grew deeper. However, in three cases the bleeding, which had before been continuous, stopped entirely. The general condition grew worse faster than is usually observed in patients with "inoperable" uterine cancer. In only one case was there a gain in weight; in the others the loss of flesh was rapid. Therefore, although they say that chelidonium has a good influence on the stomach, they declare it to be useless as a remedy for cancer and harmful by its effect on the general condition.

Freudenberg, however, has had somewhat better results, but he uses the remedy only as a local application. While he admits that it is not curative, he thinks it has a certain palliative action. It has a condensing effect on proliferative growths, so that in the course of two or three days a crater is formed in place of a cauliflower excrescence. At the same time the fœtor is done away with or reduced to a minimum. The bleeding, too, is generally diminished, but not always. No influence is exerted on the extension of the growth or on metastasis. The treatment with chelidonium, in short, is as good as any other palliative procedure and has the advantages of freedom from danger, painlessness, and easy employment. Freudenberg dilutes the extract with weak antiseptic solutions and applies it on tampons. In hæmorrhagic cases he presses a wad wet with the solution firmly against the diseased surface, and keeps it in place by tamponing the vagina. In such cases the dressing has to be renewed every day; in other cases the patient herself may remove the tampon on the day after its introduction, which should be repeated every two, three, or four days, the patient using disinfectant vaginal injections in the intervals.

MINOR PARAGRAPHS.

THE TEMPERATURE OF INTRAVENOUS INJECTIONS.

AT a recent meeting of the Lyons National Society of Medicine (*Province médicale,* July 17th) Professor Lépine referred to Athanasiu and Carvallo's demonstration of the harmlessness of injecting very hot water into the veins in dogs, and stated that he had tested the effects of injecting very cold water. On three dogs, he practised the intravenous injection of five hundred cubic centimetres at temperatures of 44.6°, 42.8°, and 35.6° F. There was a great augmentation of the respiratory movements; there was retardation of the heart's action when the injection was thrown into the jugular, but no notable retardation if it was thrown into a vein of the paw; there was a reduction of the central temperature of from 4.5° to 5.4° F.; and there were signs of distress. Subsequently the temperature rose very rapidly to its normal degree, and rose a little more a few hours later. There were no other disturbances, immediate or remote. The lesson to be learned from these experiments, says Lépine, is that when we are about to practise saline infusion there is no occasion to be over-particular about the temperature of the water; he feels sure that at ordinary room temperature it would do no harm. By reason of the sudden fall of the temperature of the blood caused by cold intravenous injections, they might be of service, he suggests, in threatening cases of hyperthermia, but probably only for a short time, in view of the subsequent rapid return of the temperature to the normal point in his experiments.

EXPERIMENTAL OVARIAN GRAFTING.

THE *Presse médicale* for July 24th contains a report of the proceedings of a recent meeting of the Paris Anatomical Society at which M. Jayle stated that he had begun a series of experiments in ovarian grafting. He showed several animals that had ovaries which had not originally belonged to them—rabbits with ovaries from other rabbits or from guinea-pigs and guinea-pigs with ovaries from other guinea-pigs or from rabbits. He stated that he had begun to experiment in the fecundation of such animals, and would ultimately report the results. Among other things, he was going to remove the ovaries from a rabbit and replace them with those of a guinea-pig, and then inject the semen of a guinea-pig into the rabbit. All these experiments were undertaken for the purpose of testing the law of the immutability of species, and to produce hybrids by a new means.

A VEGETABLE BEZOAR.

SCHREIBER (*Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie,* i, 5; *Centralblatt für Chirurgie,* July 31, 1897) relates the case of a woman, forty-five years old, who was affected with loss of appetite, a feeling of repletion, and nausea, but without vomiting. A very movable mass as large as a fist could be felt in the belly, and at first it was taken for a floating kidney. Subsequently Schreiber concluded that it lay free in the stomach, and his conclusion was justified on the performance of gastrotomy. The mass, which was nodular, was about four inches long, two inches broad, and a little less than two inches thick. It weighed about seven ounces, and its shape was suggestive of that of the stomach in a state of contraction. On microscopical examination, it was found to consist of vegetable cells and fibres with scattered micrococci and masses of detritus. Inasmuch as the patient had for a long time eschewed all ordinary food and eaten great quantities of *Schwarzwurzel* cooked in butter, it is thought probable that that root furnished the material that constituted the bezoar.

A RARE COLLECTION OF FOREIGN BODIES IN THE STOMACH.

Frickner (*Deutsche medicinische Wochenschrift,* 1897, No. 4; *Centralblatt für Chirurgie,* July 31, 1897) relates the case of an hysterical woman, thirty-two years old, who, several months after having swallowed a variety of articles with suicidal intent, began to suffer with severe digestive disturbances, vomiting, etc., and finally with a tender lump in the left side of the belly. Laparotomy was performed, and the incision opened an abscess near the stomach. Then the stomach was opened and a large collection of the most varied articles was found, among them a key, two teaspoons, a silver fork, wire tacks, hairpins, pieces of glass, etc., in all, thirty-seven pieces weighing more than eight ounces. The most difficult to remove was the fork, the prongs of which were directed toward the pylorus. The gastric incision was closed with sutures, and an iodoform-gauze tampon was placed in the abdominal incision. Healing and recovery were rapid. Frickner has looked up the literature of the subject, and he finds that in only three out of fifty-three cases was more than one foreign body found. His own case makes fifty-four in which an operation was performed, and forty-four of the patients recovered. On the whole, the prognosis seems tolerably good.

ASYSTOLE AND CHEYNE-STOKES RESPIRATION.

Merklen (*Gazette des hôpitaux,* 1897, Nos. 22 and 23; *Centralblatt für innere Medicin,* July 31, 1897) reports two cases of chronic myocarditis in which coma and Cheyne-Stokes respiration occurred without uræmia. In the first case coma came on at the time when the diuresis was increased and the irregularity of the heart's action ameliorated by means of digitalis; the weakness of the heart remained, and the coma soon ended in death. In the second case weakness of the heart and coma showed themselves in the course of a pleuro-pulmonary congestion in an alcoholic subject. The weakness and dilatation of the heart persisted after increased diuresis had been effected by means of digitalis. After several weeks of treatment the Cheyne-Stokes respiration made its appearance. In this case recovery took place. It is considered particularly worthy of note that during the employment of digitalis the respiratory disturbance occurred, and that during that of morphine it disappeared—repeatedly in the second case. To explain the cerebral disturbances in these cases, says the author, we must assume the presence of some dyscratic or organic change which preceded and favored the respiratory anomaly, for the cardiac insufficiency could not cause such symptoms.

THE AFTER-TREATMENT IN CASES OF ABDOMINAL SECTION.

To combat shock, Bodon, of Budapest (*Therapeutische Monatshefte,* March, 1897; *Centralblatt für Gynäkologie,* July 31, 1897), besides enemata or infusions of salt, employs subcutaneous injections of strychnine, not exceeding the dose of fifteen one-hundredths of a grain. Opium and morphine, he thinks, should not be used. Through the day on which the operation has been performed he gives the patient teaspoonful doses of very hot water (at 104° F.), which, he says, has a favorable action on the mucous membrane of the stomach, besides increasing the bulk of the gastric contents and thus facilitating the act of vomiting. On the second day the patient is allowed bouillon, beef tea, and tea with milk; on the third day, soup with egg, scraped raw meat, and fish or fowl. This is to evoke intestinal peristalsis. In eight or ten hours after the operation a rectal tube is passed through the anus, and this is repeated every four hours, for the removal of flatus. He considers it irrational to give morsels of ice to allay thirst; he prefers the drinking of warm water and the ingestion of salt. To prevent septic peritonitis, the occasional effect of migration of the *Bacterium coli,* he gives calomel before the operation. To avoid ventral hernia, he makes the incision along the middle of one of the recti abdominis muscles.

ACUTE BEDSORES.

Segond (*Revue de gynécologie et de chirurgie abdominale,* 1897, No. 1; *Centralblatt für Gynäkologie,* July 31, 1897) reports six cases of the acute formation of bedsores in five hundred and forty-two cases of vaginal hysterectomy. They all occurred in young women who had pelvic inflammation, and Segond attributes the occurrence to irritation of the pelvic nerves due to the inflammation. The operation had nothing to do with causing it; neither had the pressure of the operating-table. In from three to five days after the operation a large spot of erythema was observed over the sacrum. At the same time the temperature rose and the general condition became bad. Gangrene of the parts set in subsequently and extended to the bone. There was no fatal case, but recovery was very tedious.

EMOTIONAL DYSPEPSIA.

Rosenbach (*Berliner klinische Wochenschrift,* 1897, Nos. 4 and 5; *Centralblatt für innere Medicin,* July 31, 1897) writes of a form of dyspepsia which as a rule shows itself as the result of severe emotional strain. Along with general nervous symptoms and muscular pains in the back and in the abdomen, more or less decided signs of digestive disturbance are manifested. Aversion to food, dryness of the mouth, and distention of the abdomen, especially of the epigastrium, after meals are the characteristic symptoms; sometimes there are also present eructations, flatulence, peristaltic uneasiness before eating, nervous diarrhœa, and a complaint of hunger without appetite. The avoidance of business cares, the application of warmth, the employment of small doses of narcotics and sedatives, the use of laxatives, and due regulation of the habits will generally bring about a cure.

THE MICROBE OF MUMPS.

AT the recent meeting of the Congress für innere Medicin (*Wiener medizinische Blätter*, July 29th) Bein, of Berlin, made a report supplementary to Michaelis's contributions on this subject. He said that the micro-organism of mumps was a streptococcus very similar in its shape and in its attitude in the cells to the gonococcus and to the meningococcus. It grew in ordinary agar, peptone bouillon, and ascitic fluid, it curdled milk, and it liquefied gelatin. Its movements were peculiar. Fresh cultures would kill mice. It had been found in the secretion from Stenson's duct, in the contents of parotid abscesses, and once in the blood.

ATRESIA OF THE ANUS WITH AN ANO-SCROTAL FISTULA.

STEUDEL (*Deutsche medicinische Wochenschrift*, 1896, No. 50; *Deutsche Medizinal-Zeitung*, July 26, 1897) relates the case of a boy born with an imperforate anus, but with a passage as large as a crow's quill extending from the rudimentary anus to about the middle of the scrotum, where it terminated in a fine opening. It was slit open to the rectum with a probe-pointed bistoury, and a great quantity of pent-up meconium was let out. There was no pronounced external sphincter; nevertheless, the boy, two years old at the time of the report, has been able to retain his fæces, even during attacks of diarrhœa.

AN INVERTED TOOTH.

B. FRAENKEL recently showed at a meeting of the Berlin Medical Society (*Deutsche Medizinal-Zeitung*, July 29th) a boy who had syphilitic caries and necrosis of various bones of the nose, with perforation of the soft palate. In the extraction of sequestra from the nasal passages a piece of bone had been encountered that seemed absolutely refractory to the saw. It had turned out to be an inverted tooth with its entire crown distinctly visible above the floor of the nose.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 17, 1897:

DISEASES.	Week ending Aug. 10.		Week ending Aug. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	53	6	27	8
Scarlet fever	78	4	75	3
Cerebro-spinal meningitis	0	0	1	0
Measles	87	3	79	5
Diphtheria	167	29	146	23
Croup	4	0	4	2
Tuberculosis	268	120	145	101

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon-general during the week ending August 14, 1897:

Small-pox—United States.

Birmingham, Ala.	May 8–Aug. 12	96 cases.	

Small-pox—Foreign.

Cardenas, Cuba	July 24–31		1 death.
Glasgow, Scotland	July 17–24	3 cases.	
Hong Kong, China	June 12–19		2 deaths.
Nagasaki, Japan	July 3–10	10 "	1 death.
Osaka and Hiogo, Japan	June 27–July 10	2 "	
Pernambuco, Brazil	May 29–June 26		12 deaths.
Rio de Janeiro, Brazil	July 3–10	3 "	
Warsaw, Russia	July 17–24		5 "
Calcutta, India	June 19–26		3 "
Barcelona, Spain	May 1–31.		16 "
Yokohama, Japan	June 24–July 1	1 case,	1 death.
Moscow, Russia	July 10–17	1 "	
Madras, India	July 3–9	3 cases,	1 "
Odessa, Russia	July 17–24	1 case,	1 "
Madrid, Spain	July 26		2 deaths.
St. Petersburg, Russia	July 17–24	9 cases,	2 "

Cholera.

Osaka and Hiogo, Japan	June 27–July 10	4 cases,	2 deaths.
Calcutta, India	June 19–July 3		96 "
Bombay, India	June 30–July 6		15 "
Tokyo, Japan	July 7–15	4 "	2 "
Fukuoka Ken, Japan	July 7–15	1 case.	
Kanagawa Ken, Japan	July 7–15	2 cases,	2 "

Yellow Fever.

Cardenas, Cuba	July 24–31		2 deaths.
Cienfuegos, Cuba	July 18–25		13 "
Rio de Janeiro, Brazil	July 3–10	2 cases.	
Matanzas, Cuba	July 21–28		6 "
Cienfuegos, Cuba	July 28–Aug. 1		16 "
Panama, U. S. of Col.	July 27–Aug. 3	13 "	5 "
Santiago de Cuba	July 24–31		17 "

Plague.

Bombay, India	June 30–July 6		7 deaths.
Kanagawa Ken, Japan	July 7–15	1 case,	1 death.
Formosa, Japan	July 7–15	8 cases.	

Medical Schools in Denver.—A correspondent informs us that by a decision of the Supreme Court the Medical Department of the University of Colorado will no longer be permitted to conduct a course of instruction in Denver. Yet, this does not mean that the University of Colorado will not carry on a medical department. A regular course of medical instruction will be given in Boulder for the present, and as soon as the charter is amended the medical department will be organized in Denver. A large portion of the former faculty of the University of Colorado has united with the Gross Medical College, of Denver, thus making the Gross one of the strongest schools in the West. Notable among those who have thus strengthened the Gross Medical College are Dr. Clayton Parkhill, Dr. Josiah N. Hall, Dr. G. Melville Black, and Dr. James M. Blaine, of the State university. The faculty of the Gross Medical College has been further enlarged by the election of Dr. William N. Beggs, of St. Louis, in pathology and practice of medicine, Dr. Lincoln Mussey, of Cincinnati, in anatomy and orthopædic surgery, Dr. George Edward Tyler, of Washington, D. C., in physiology, Dr. Louis H. Kemble, of Denver, in minor surgery, Dr. Charles Byron Nichols, of Boston, in clinical midwifery, Dr. David H. Coover in clinical ophthalmology and otology, and Dr. David D. Thornton, of Chicago, in pathology.

The Pennsylvania and Maryland Union Medical Association.—The twentieth annual reunion will be held at Highland Park, York, Pa., on Thursday, August 26th, under the direction of Dr. Joseph Price, of Philadelphia. Physicians and their families are cordially invited to be present. Dinner will be served at 12.30 o'clock P. M. at the Colonial Hotel. The formal proceedings will include the election of officers.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 8 to August 14, 1897:*

ARTHUR, WILLIAM H., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about September 1st.

Lynch, Charles, First Lieutenant and Assistant Surgeon. The leave of absence granted him is extended one month.

Shaw, Henry A., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

Births, Marriages, and Deaths.

Married.

Allen—Fairbanks.—In Indianapolis, on Friday, August 13th, Dr. Horace R. Allen, Jr., and Miss Adelaide Fairbanks.

Davis—Mustin.—In Birmingham, Alabama, on Thursday, August 12th, Dr. William E. B. Davis and Miss Gertrude Mustin.

Hoddick—Fuchs.—In Buffalo, on Wednesday, August 11th, Dr. William A. Hoddick and Miss Ida Louisa Fuchs.

Died.

Briddon.—In Mount Sinai, Long Island, on Monday, August 16th, Martha Briddon, wife of Dr. Charles K. Briddon, of New York.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of April 7, 1897.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

Extirpation of a Retrosternal Tumor of the Thyreoid.—Dr. A. B. Johnson presented a woman from whom he had removed such a growth. She was a German, thirty-five years of age. Eleven years ago a slight fullness had appeared on the right side of the neck, corresponding to the situation of the right lobe of the thyreoid gland. This had gradually increased in size, and during the last six weeks had caused grave symptoms. She had suffered from pain, hoarseness, and cough, associated with expectoration of mucus. Of late, there had been attacks of alarming dyspnœa, aggravated by exertion and the recumbent position. There had also been some difficulty in swallowing. The patient had been nervous and had suffered from headache and attacks of syncope. There had been no palpitation, and no exophthalmia. Examination had shown the patient to be fairly nourished; the right external jugular vein moderately dilated; the tumor extending from the level of the upper border of the thyreoid cartilage downward behind the sternum, and from the posterior border of the sterno-mastoid to the anterior border of the opposite muscle. The skin over the tumor had been normal and freely movable. The tumor had been smooth, rounded, tense, and elastic, and had moved up and down with the larynx. The right carotid artery had been displaced outward. On auscultation of the tumor there had been heard a soft but distinct systolic murmur. On March 15, 1897, under ether, an incision had been made from the angle of the jaw obliquely downward and inward to the median line, at the level of the upper border of the thyreoid cartilage, and thence vertically downward to half an inch below the sternal notch. The sternolaryngeal muscles above had then been divided, the muscles of the opposite side and below separated, and the enlarged right lobe of the thyreoid exposed. The tumor had been separated easily from the surrounding tissues by blunt dissection. The thyreoid arteries, together with the superior, middle, and inferior thyreoid veins, had been cut between double ligatures. The elevation of the growth from behind the sternum had been easily accomplished with the fingers, and the whole mass rotated toward the sound side, care being taken not to injure the recurrent laryngeal nerve. The tumor had extended downward about two inches below the upper border of the sternum. The isthmus had been of some thickness, and had been tied with heavy catgut. The deeper structures had been sutured with catgut, and the skin with silk, and the lower end of the wound had been left open. Sterile gauze had been used to fill the space behind the sternum. The loss of blood had been small, and at the close of the operation the patient had been in good condition. After the cutting off of the blood supply of the tumor it had diminished greatly in size, so that after removal it had measured three inches and a half by two inches and a half by one inch. The surface had been somewhat irregular from the presence of numerous small cysts, and the cut section had showed many small cysts, filled with blood-stained serum, together with gland tissue, interstitial hæmorrhage, and bands of firm, almost cartilaginous, fibrous tissue. The highest temperature and pulse had occurred immediately after operation—100.8° F., and pulse, 102. For three days following the operation there had been a good deal of oozing of blood-stained serum. On the fourth day the temperature and pulse had reached the normal, and the discharge had greatly diminished. At the end of a week the sutures had been removed, and the wound had been found healed except for a small granulating area at the lower angle. The patient had been discharged well on the thirteenth day after operation. The hoarseness, dyspnœa, and cough had disappeared.

Avulsion of Biceps Tendon from the Radius.—Dr. Johnson also presented a report of a case of this kind occurring in a patient who had been admitted to Roosevelt Hospital February 1, 1897. One week previously, while lifting some heavy iron pipes, he had felt and heard a distinct snap at the elbow, and at the same time the arm had become powerless. Pain, tenderness, and swelling had followed. On examination, the patient had been found to be a muscular man. The anterior aspect of the right elbow had presented a slight fullness above the joint. On palpation, a rounded, hard mass, of the size of the last joint of a man's thumb, could be felt on the anterior and internal aspect of the arm, about two inches above the joint. This mass had been movable and apparently continuous above with the biceps muscle. The movements of the elbow had been perfect, but flexion had been very feeble. On February 9th a median incision had been made in front of the bend of the elbow, and the hard mass had been found to consist of the ragged end of the ruptured biceps tendon covered with fibrin. The torn end had been trimmed smooth, and sutured to the periosteum on either side of the tuberosity of the radius. Two heavy catgut sutures had also been passed through the tendon an inch from its end and firmly tied to the muscles and fascia on either side. The arm had been flexed to less than a right angle and supinated, and the sutures tied in such a way that the end of the tendon had remained in contact with the tuberosity of the radius without tension. The wound had been drained with rubber and closed, a light plaster dressing being applied over the sterile dressing, and the arm strongly flexed and the forearm supinated. The dressing had been removed on the fourteenth day and the wound had been found to be healed. The arm had been kept in plaster for six weeks, and for two weeks longer in a light starch bandage. At this time, moderately free use of the arm had been allowed. At the present time, flexion seemed to be done by the biceps with good force.

Cured Popliteal Aneurysm.—Dr. Johnson then exhibited a man, twenty-six years of age, who had been admitted to Roosevelt Hospital on February 10th, with no history of injury. He had denied syphilis. Since December, 1895, he had had increasing pain and stiffness in the left knee. Seven months ago he had first noticed a lump in the middle of the left popliteal space, which had steadily increased to its present size. This had been accompanied by such severe pain that he had been obliged three months ago to give up work. Examination had shown in the left popliteal space a rounded oblong tumor, with the long diameter vertical. It had measured three inches and a half by two inches and a half; had been smooth, tense, and elastic, and had not been attached to the overlying skin. There had been an expansive pulsation in the mass, synchronous with the heart-beats. Palpation had detected a thrill, and auscultation a loud, blowing, systolic murmur. Compression of the femoral artery had caused a cessation of pulsation and thrill and murmur, and pressure had caused a diminution in the size of the tumor. On relaxing the pressure the tumor had become larger, and the other signs had returned. Pulsation in the left anterior tibial had been delayed, and had been more feeble than in the opposite limb. Active flexion of the knee joint had been slightly diminished on the left side. On February 13th, under ether, the superficial femoral had been divided between double ligatures at the apex of Scarpa's triangle. The wound had healed by primary union, and the nutrition of the limb had remained good, but the patient had suffered much pain in the leg and thigh, and there had been numbness of the foot. Much of the pain had been along the trunk and in the distribution of the sciatic nerve. The sac was a little smaller and firmer, and without pulsation.

Webbed Fingers.—Dr. Johnson next presented a case of bilateral webbed fingers in a boy of five years. There had been no family history of congenital deformities. On the right hand, the little finger for one half its length had been united to the ring finger by a thin web of skin, and the index and middle fingers had been in the same condition. The middle and ring fingers had been firmly united throughout their entire length, and the skin of the palmar surface had showed no furrow. The finger tips had showed only a slight sign of division, and the finger nails had been continuous, forming one broad nail. The thumb had been free. The second and third phalanges of the middle and ring fingers had been partly flexed, and could not be completely extended. On February 10th he had operated by very freely splitting the tissues down to the normal limit, and then applying Thiersch skin grafts to the raw surfaces. The hand had been put up on a palmar splint. Healing had been perfect except for a spot in the angle between two of the fingers. The result promised to be very satisfactory.

A Cyst of the Thyreoid Gland.—Dr. Parker Syms presented a cyst of the thyreoid gland, which had been removed from a man sixty years of age. There had been a distinct history of his having suffered from enlargement of the thyreoid gland for about twenty-five years. The enlargement had been progressive, and for the last two or three years had caused serious inconvenience by interference with respiration. There had been no evidence of pressure on the laryngeal nerve, but the larynx had been displaced by the pressure, and he had not been able to sleep in the recumbent position. He had been operated upon two weeks ago through a median incision, four inches long, supplemented by a transverse incision extending from the upper part of the first incision a distance of about three inches. The principal difficulty had arisen from the fact that the man was stout and the neck exceedingly short. The tumor had been very readily exposed, after dividing the superficial structures and the muscles, and, on passing through the thin mantle of the thyreoid, the cyst itself had been reached, and had been enucleated without difficulty. None of the thyreoid had been removed. The wound had been sutured except at the lower part of the median incision, where the deep cavity had been packed. The packing had been removed after about seventy hours. Recovery had been uneventful, and the trachea and larynx had regained their natural position.

Dr. J. W. S. Gouley said that the cases suited for excision were those in which the growths were not purely cystic, but contained some solid matter. He had done the operation once on a tumor of moderate size. This tumor had been solid, and had consisted of the right lobe of the thyreoid gland. The operation had not been difficult. The small cysts, he thought, were curable by the use of irritating injections. He had succeeded by injecting absolute alcohol into the sac, after emptying it. In one case, a patient of Dr. Charles Phelps's, the cyst of the thyreoid gland had interfered somewhat with breathing, and, at his suggestion, two such injections had been given with successful result. But he had dissected out multilocular cysts of the thyreoid that he was sure could not have been treated successfully by this injection method, and he had been astounded at the vascularity of the walls of some of these cysts.

Dr. Robert T. Morris cited a case in which a very small thyreoid cyst had developed rapidly in connection with symptoms of myxœdema, except that the muscles had not been thickened. Microscopical examination of the cyst had shown the contents to be brown thyreoid material.

Dr. W. J. Chandler, of South Orange, N. J., referring to the case of aneurysm, said that about three weeks ago he had seen a case of femoral aneurysm in which the contents had already escaped into the subcutaneous tissues. The sac had been cut into and extirpated. The patient had received eighty grains of iodide of potassium daily for five days before operation. The pulsation, which had been very distinct, at the time of operation had ceased. On cutting into the sac it had been found that the collateral circulation had been so well established that hæmorrhage from the distal as well as the proximal end of the femoral was very severe, although there had been a ligature on the external iliac. In this case he had used with much satisfaction Grad's ligature, which consisted in placing under each knot a strand of silk, so placed that by drawing upon these strands the knot might be untied and the whole ligature removed. The ligature had been removed in this way ten days after the operation.

Dr. L. W. HUBBARD asked if Dr. Johnson expected the tumor to grow smaller, and if in the event of its interfering with the knee joint would it not be possible to extirpate the tumor.

Dr. JOHNSON replied that he did not think it would interfere with the knee joint, because it had been larger at the time of the operation than now, and yet the knee-joint motion had not been impaired. However, if this should occur, or if the pain should continue, there would be no objection to extirpating the tumor.

Death from Infection by the Bacillus Aerogenes Capsulatus following External Perineal Urethrotomy.—Dr. THOMAS A. SMITH presented the following history of such a case:

James F., aged thirty-three years, was admitted to Bellevue Hospital on the 6th of May, 1896, suffering from much pain and difficulty in micturition. He had had two attacks of urethritis—the first seven years ago, the second about three years ago. For five months prior to his admission he had had some difficulty in urinating. A dense, narrow stricture had been detected in the perineal region of the urethra which, after much difficulty, had been dilated to No. 13 (English gauge). He had then been lost sight of until November 23, 1896, when he had returned to the hospital in the same critical state as before. All attempts to pass the stricture having failed, on December 5th external perineal urethrotomy had been performed by Dr. Gouley, and a drainage catheter left in the bladder through the wound. The two following days, December 6th and 7th, the bladder had been irrigated at regular intervals. His urine had been perfectly clear; his temperature had not varied from 99° F.; he had had no pain, and had been in excellent spirits. On Tuesday, December 8th, a No. 12 (English) sound had been passed down to the site of the stricture and the point of the instrument brought out through the perineal wound, causing some hæmorrhage from the granulations. The bladder had been irrigated and the drainage catheter removed. That evening he had passed his urine, some escaping through the perineal wound, but most of it through the urethra, and next morning sixteen ounces more had passed through the perineal wound. That morning, December 9th, he had had a very severe chill, his temperature rising to 105° F. within two hours. His face had been flushed and anxious; his tongue coated; his pulse rapid and irregular; there had been nausea and vomiting. He had not complained of headache, but in the afternoon had had intense pains in the back and limbs, particularly about the joints. During the night his temperature had been above 103° F. He had complained of great general pain. For about an hour he had been somewhat delirious, but after that his mind had seemed perfectly clear throughout. He had passed six ounces of urine early in the evening. The next day his temperature had remained high, and it had been evident that he was very much worse. His pulse had been weak, irregular, and rapid, and he had suffered intensely from pain in his back and about his shoulders, hips, and knees. In the afternoon there had been an area of two inches of subcutaneous emphysema, which was just above the right knee joint, and within an hour this area had increased in extent, involving the whole of the front of the thigh. Later the skin over this had appeared mottled and of a bluish color. Other areas of emphysema had soon appeared on different parts of the body. As the emphysema increased the man had complained less of pain; his pulse, however, had been then almost imperceptible. At eight o'clock that evening he had died, conscious to within a few moments of his death, having passed in all, at one time, six ounces of urine. At once the emphysema had spread very rapidly, and in an hour had covered almost the entire body.

Of the post-mortem examination the following notes had been kindly furnished by Dr. Jeffries: "General examination shows subcutaneous emphysema over the entire body. Greenish discoloration over the thorax, right thigh, and posterior surface of body, marked over the penis, scrotum, and anus. Puncture of emphysematous areas permits the escape of a gas smelling of hydrogen sulphide and burning with a faint blue flame. There was emphysema of the connective tissues over the thorax and abdomen. The muscles were soft and pulpy. The blood was dark and fluid. There were emphysematous areas over the pericardium and pleura, the visceral pericardium being emphysematous throughout. The entire liver was emphysematous. The bladder contained a small amount of turbid urine; its wall was thickened, the mucosa being extremely emphysematous. A microscopical examination of smears made from the various viscera demonstrates the presence of a seemingly pure culture of a large encapsulated bacillus. A bacterial examination of cultures made from the same organs demonstrates this bacillus to be the *Bacillus aerogenes capsulatus.*"

In this case the point of infection by the bacillus would appear to be the perineal wound, and at the time of the passing of the sound less than twenty-four hours before the chill.

The main points of the disease, as presented by this single case, would seem to be: 1. The sudden onset, with high fever and great prostration, but no delirium.

2. The severe general pains, particularly about the larger joints.

3. The almost complete suppression of urine.

4. The general subcutaneous emphysema with bluish mottling of the skin.

5. That consciousness was retained to within a few moments of death.

Dr. GOULEY said that at first the case had seemed to him entirely new, but he had recalled a similar instance of sudden death after a severe railway injury. In that case the whole body had become emphysematous. Of course, at that time, about twenty-five years ago, nothing had been known of this bacillus. There had been one or two other cases at Bellevue Hospital, and several had also been reported from the Johns Hopkins Hospital in Baltimore.

The PRESIDENT said that he had lately had a very similar case—one of external urethrotomy for stricture—which had run an aseptic course up to the fifth day. At this time a sound had been passed into the bladder, and shortly afterward the man had had a severe chill and a temperature of 105° F. He had died within thirty-six hours. Immediately after the seizure he had developed an emphysematous spot on the right buttock and on the shoulder, opposite the points of pressure. There had been no emphysema about the perineal wound, and the latter had appeared absolutely healthy. A specimen taken from the emphysematous areas before death had given a perfectly pure culture of this bacillus. He believed this case had been reported by Dr. Dunham in the *Johns Hopkins Hospital Bulletin.* A culture from the deep urethra after death had also revealed these bacilli. It had been presumed that the infection had taken place at the time of the passage of the sound. The speaker recalled another case, seen at Bellevue Hospital, which had been transferred from one of the other hospitals. He had refused operation on a tight stricture of the urethra, but had had a sound passed upon him just before admission to Bellevue Hospital. On entering the latter hospital he had developed a gaseous tumor in the groin and in the back. These had been incised, and some bloody serous matter evacuated. This patient had died in a day or two, and the autopsy had shown nothing but a collection of blood-stained fluid containing gas, which had passed up through the tissues behind the colon, and which had seemed to be connected with a slight lesion in the urethra.

A Skin Lesion Occurring with Gonorrhœal Septicæmia.—Dr. Robert T. Morris exhibited photographs and made a report of the following case: The patient, a man of twenty-five years, had contracted gonorrhœa in July, 1895. This had been followed by stricture and gleet. He had developed gonorrhœal septicæmia in the following year. Shortly after this had begun, one joint after another had become involved, and in about three weeks skin lesions had appeared on the lower part of the leg, forearms, and feet. These had consisted of round "craters," involving, apparently, the whole thickness of the true skin, and giving to it a punctured appearance. This had been surrounded by an area of hypertrophic and reddened skin. In the next year these lesions had increased to fifteen in number. In October, 1896, the patient had been in bad condition. At that time the speaker had divided the stricture, and had made deep injections of nitrate of silver into the urethra. Very shortly after that the skin lesions and the evidence of gonorrhœal septicæmia had begun to disappear. At the present time there was no arthritis; he had gained about twenty pounds, and all but one of the skin lesions had completely healed. Scrapings had been taken from the skin lesions while they had been in process of healing, but examination had failed to show any gonococci.

A Cured Angeio-sarcoma of the Lip.—Dr. Morris also reported a case of congenital nævus of the lip, occurring in a patient thirty-two years of age. Several unsuccessful operations had been done in various cities, but the nævus had continued to grow. In 1892 it had suddenly become malignant, and had increased very rapidly in size, becoming a pulsating, bluish, ulcerating mass. The speaker had planned, as a preliminary step, to ligate the external carotids, but as the assistants had seemed to be able to control the principal arterial supply by digital pressure, he had trusted to this. The result had been a frightful hæmorrhage, which had demanded a quick transfixion of the tissues and the bandaging of the scalpel *in situ*. After a week he had removed the constricting bandage and scalpel and had trimmed away the slough. There had been no upper lip left at all, and a considerable part of the lower lip had also gone. Nevertheless, the process of repair had been quite satisfactory. A few weeks later he had attempted to restore the upper lip, and, although the result had been very good in appearance, it had been found that the growth had already recurred. Microscopical examination had shown the growth to be an angeio-sarcoma. Dr. Coley had then made a number of injections with the streptococcus toxines. After a short time the tumor had diminished in size up to a certain point, and had then remained stationary. At this time a small piece had been examined and had been found to still preserve its character. The man had then gone to his home, but a recent letter had stated that the tumor had decreased steadily, that the lip was white and normal, and the patient was well.

A Congenital Cyst of the Hand.—Dr. Morris also reported a case of this kind. The cyst had started near the thenar eminence, and had slowly developed during a period of at least thirteen years. Recently two more acute collections of fluid had formed on the opposite side of the palm. The cyst had been larger than a pigeon's egg, and had contained material like white of egg.

Dr. Gouley said that it was known that sarcomata after injections of any kind, or after operations, might undergo a fibroid change—in other words, that there was a progressive metamorphosis instead of a retrogressive or malignant process. He had seen sarcomata recur, and then begin to harden and decrease in size. The operation itself had seemed to be responsible for this change.

The Treatment of Tetanus.—Dr. Alexander Lambert read a paper with this title. (See vol. lxv, page 754.)

Dr. W. H. Park said that he had had an unpleasantly large experience with tetanus in the lower animals. During the past hot summer the workers in the laboratory had become aware that a large number of tetanus germs were present. This had probably been due to the fact that the laboratory was near a stable. Before this had become known they had been surprised with the occurrence of tetanus in a number of the animals. He was disposed to take issue with the reader of the paper regarding the rapidity of absorption of the tetanus toxine. Tetanus and diphtheria were very much alike, and it had been established that the poison of diphtheria was very slowly absorbed. In cases of tetanus it was well known that there were no tetanus bacilli alive in the wound at the time of the development of the symptoms of the disease, but certainly the toxines were present in the tissues. In one of the goats that had first become affected with tetanus at the laboratory, a portion of tissue from the wound had been examined, and had been found to be free from tetanus bacilli, yet the tissue when inoculated into animals had produced tetanus. As it was thought that the tetanus was due to the fact that the animals were kept in the stable, most of the animals had been immunized with the tetanus antitoxine. All the animals so immunized had failed to develop tetanus, while the animals not so immunized had developed tetanus.

Dr. Gouley spoke in terms of high commendation of the paper just presented. He cited one case in illustration of the early use of what appeared to be the most powerful agent in the treatment of this very serious disease. He said that the winter before last a patient, a baker who had accidentally shot himself in the finger, had been brought to Bellevue Hospital on the fifth day. No one had suspected tetanus up to that time, but the symptoms had been well marked, and he had given a bad prognosis. Nevertheless it had seemed to him to be proper to give the tetanus antitoxine a trial. It had been given, but too late, the man dying a few hours afterward. Many years ago he had had occasion to observe for several weeks two cases of tetanus treated in the old-fashioned way by the free use of morphine and iodide and bromide of potassium. In both of these cases the symptoms of tetanus had not been observed for two weeks after the injury. Both had made a good recovery, but convalescence had been very slow, the trismus remaining at least two months.

Dr. Lambert said that he could not agree with Dr.

Park that tetanus and diphtheria poison acted similarly. The diphtheria poison produced œdema; the poison of tetanus produced no local symptoms whatever, except in man and animals paralysis of the facial nerve, and the reason for this was not yet definitely known. As it differed in local action, it was quite probable that it differed also in its absorption. Of the hundred cases in which the duration of the trismus was given, it had varied from fourteen days to nearly two months. In the cases he had seen, the last muscles to regain the natural state had been the belly muscles.

Book Notices.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Parts VIII and IX. Pp. 175 to 216. [Price, $3 each part.]

The first plate of Part VIII represents the development of an enormous epitheliomatous growth upon a lupus scar of years' standing, and serves as a good illustration of the well-known fact that scar tissue devoid of all neoplasm may become the starting point of epithelioma many years after its formation. The unfortunate woman depicted here might well be said to have attained the culminating point of human hideousness, owing to disfigurement from lupus, from its scars, and from epithelioma. The realism of the picture is only emphasized by our knowing that these plates are all from molds taken directly from the patient by a process that reduces the personal equation to a minimum and of which M. Borretta only is the master. The next plate is a superb illustration of erythema iris. The French still cling to the term "hydroa," as the English do to that of herpes iris, to designate this form of multiform erythema. These terms here should be dropped. There *is* a group of vesicular and bullous eruptions, somewhat confused at present, lying between multiform erythema and pemphigus, and several of those are more properly fitted for the term hydroa. Pringle includes in this group one distinct form which Duhring isolated some time since under the name of dermatitis herpetiformis. Crocker still calls it, however, hydroa herpetiforme.

The best plate of Part VIII is the one illustrating lichen planus. It portrays with extraordinary fidelity the various features of this disease, generally so difficult to recognize, always to depict accurately. It is a most valuable and instructive plate, and we regret we can not say as much for the accompanying article; the plate in this case is decidedly "the thing." The Biskra button is well shown in the last illustration. We so seldom, if ever, see this disease here that it may be classed among the very rare cases; hence this plate, notwithstanding its great artistic merit, is of little value to us, and we regret its place could not have been given to the consideration of a more commonplace disease.

From a practical point of view there are but two articles in Part IX that have value—the one on squamous eczema of the palms of the hand, by Jacquet, the other on scabies, by Feulard. Both articles are short, good, clear, and to the point, and the plates excellent, especially the one illustrating a pustular form of scabies—a disease common enough, but not always recognized, at least not easily; hence a plate presenting, as this one does so well, a typical picture of the various lesions is of special value, above all, we might say, to the general practitioner.

The next two articles are too entirely local in their handling of the subjects discussed to have much if any practical value outside of France. It is to be regretted that the point of general practical value should not be kept more in view by all the contributors to this work. Of late the prospectus of the *Atlas* seems to have been considerably disregarded in this respect.

Suite de monographies cliniques sur les questions nouvelles en médecine, en chirurgie, en biologie. No. 1. De l'appendicite; pathogénie; clinique; traitement. Par le Dr. F. Legueu, Chirurgien des hôpitaux de Paris. No. 2. Le Traitement du mal de Pott. Par le Dr. A. Chipault. Paris: Masson et Cie., 1897.

The first number of this series of monographs on the medical and surgical questions of the day is on the ever-interesting subject of appendicular inflammation. In it Dr. Legueu gives a clear account of the pathogeny, symptoms, and treatment of the different varieties of this disease and generously recognizes the work of American surgeons.

Dr. Chipault's monograph on the treatment of Pott's disease is particularly timely, as he is one of the principal exponents of the French method of reduction of the *bosse* under anæsthesia recently brought into notice by Dr. Calot. Dr. Chipault claims priority for this operation and combines with it the wiring of the spinous processes, as first suggested by Dr. Hadra, of Texas. It has not found favor in America. Dr. Chipault is much more modest than Dr. Calot in his allegations for the method of reduction, using it only in the so-called non-ankylosed cases and contenting himself with such correction as can readily be obtained without violence. The author has no confidence in the ambulant treatment with jackets or apparatus, but considers a long period of recumbency absolutely necessary; for this purpose he has his patients strapped to a board fitted to the body. The main value of the monograph seems to lie in its insistence on stricter confinement, a view toward which the profession is tending, and in its suggestion of the possible value of anæsthesia for relaxing muscular spasm in the early stages.

Surgical Hints for the Surgeon and General Practitioner. By Howard Lilienthal, M. D., Assistant Attending Surgeon to Mt. Sinai Hospital, New York City. New York: The International Journal of Surgery Co., 1897. Pp. 5 to 29.

This is an attractive little volume containing a large amount of valuable information upon the subject of surgical technics, anæsthesia, dressings, emergencies, etc., which all surgeons ought to possess, but which few acquire except as the result of long experience.

Antisepsis and Antiseptics. By CHARLES MILTON BUCHANAN, M. D., Professor of Chemistry, Toxicology, and Metallurgy, National University, Washington. With an Introduction by Professor AUGUSTUS C. BERNAYS. Newark: The Terhune Company, 1897. Pp. xvi-3 to 352.

THIS book represents a praiseworthy attempt on the part of a clever and experienced chemist to produce a contribution to surgical literature. In it the history and development of the modern methods of wound treatment are given, and an exhaustive review of the various drugs and antiseptic agents used or suggested during this period.

The book contains many typographical errors and other evidences of careless preparation.

The Eye as an Aid in General Diagnosis. A Handbook for the Use of Students and General Practitioners. By E. H. LINNELL, M. D. Philadelphia: The Edwards and Docker Co., 1897. Pp. 5 to 248.

THIS work is simply a handbook of diagnosis and is not a treatise on ophthalmology.

It is divided into two parts and twelve chapters. The six chapters in part first are devoted to the enumeration and general significance of affections of the lids, the conjunctiva, the orbit, the cornea, the sclera, the eyeball, the external ocular muscles, the lens, the iris, the fundus oculi, the sight, and the field of vision. Chapter v includes affections of the chiasm, the optic tract and ganglia, and the cortical visual centres, and psychic visual disorders. Chapter vi contains a tabulated statement of general diseases with more or less characteristic eye symptoms, which, while somewhat incomplete and defective, will prove of considerable convenience.

Part second is also divided into six chapters and is devoted to a consideration of general reflex neuroses. Under this head come the relation of ocular affections to functional nervous diseases; the relation of affections of remote organs to ocular neuroses; the ocular affections of toxic origin; toxic amblyopia; ocular affections caused by various therapeutic agents; ocular affections resulting from non-medicinal poisonous substances; and ocular affections due to toxic substances contained in articles of food and drink. There is a somewhat brief bibliography, and there is a very good index.

This book is not intended to take the place of Knies's work, *The Relations of Diseases of the Eye to General Diseases,* but it will doubtless be found of practical use to the student and practitioner. It is well printed on good paper, but contains very few illustrations.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the cooperation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part X. Pp. 217 to 244. [Price, $3 each part.]

The American Text-book of Operative Dentistry. In Contributions by Eminent Authorities. Edited by Edward C. Kirk, D. D. S., Professor of Clinical Dentistry in the University of Pennsylvania, Philadelphia, etc. Illustrated with Seven Hundred and Fifty-one Engravings. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. 7 to 702. [Price, $5.50.]

Preputial Reflex Epileptiform Convulsions, with a Report of a Case. By Alexander L. Hodgdon, M. D., of Baltimore. [Reprinted from the *Alienist and Neurologist.*]

Arsenical Neuritis, with a Report of a Case occurring in a Lad of Five Years. By Alfred Stengel, M. D., of Philadelphia. [Reprinted from the *Archives of Pædiatrics.*]

Gonorrhœal Endocarditis. By Alfred Stengel, M. D. [Reprinted from the *University Medical Magazine.*]

Circumcision, with a Description of a Pair of Circumcision Forceps. By Alexander L. Hodgdon, M. D. [Reprinted from the *Maryland Medical Journal.*]

Von der Behandlung acuter Perforations-Peritonitis nach Appendicitis, nebst Beschreibung eines Falles mit glücklichem Ausgang. Von Björn Floderus. [Sonderabdruck aus dem *Archiv für klin. Chirurgie.*]

Ueber die Behandlung der Ruptur der hinteren Harnröhre, mit 4 Fällen von Ruptur der Pars membranacea, darunter eine Fahrradverletzung. Von Professor K. G. Lennander. [Sonderabdruck aus dem *Archiv für klin. Chirurgie.*]

Drei mit Erfolg operirte Fälle von Thrombose im Sinus transversus nach Otitis media. Von Dr. Karl Dahlgren. [Sonderabdruck aus dem *Archiv für klin. Chirurgie.*]

Om Röntgens Stralar I Hjärnkirurgiens Tjänst. Af S. E. Henschen och Professor K. G. Lennander. [Aftryck ur *Nordiskt medicinskt Arkiv.*]

New Inventions, etc.

NEW INTRANASAL INSTRUMENTS.

By HENRY W. WANDLESS, M. D.,
DALLAS, TEXAS

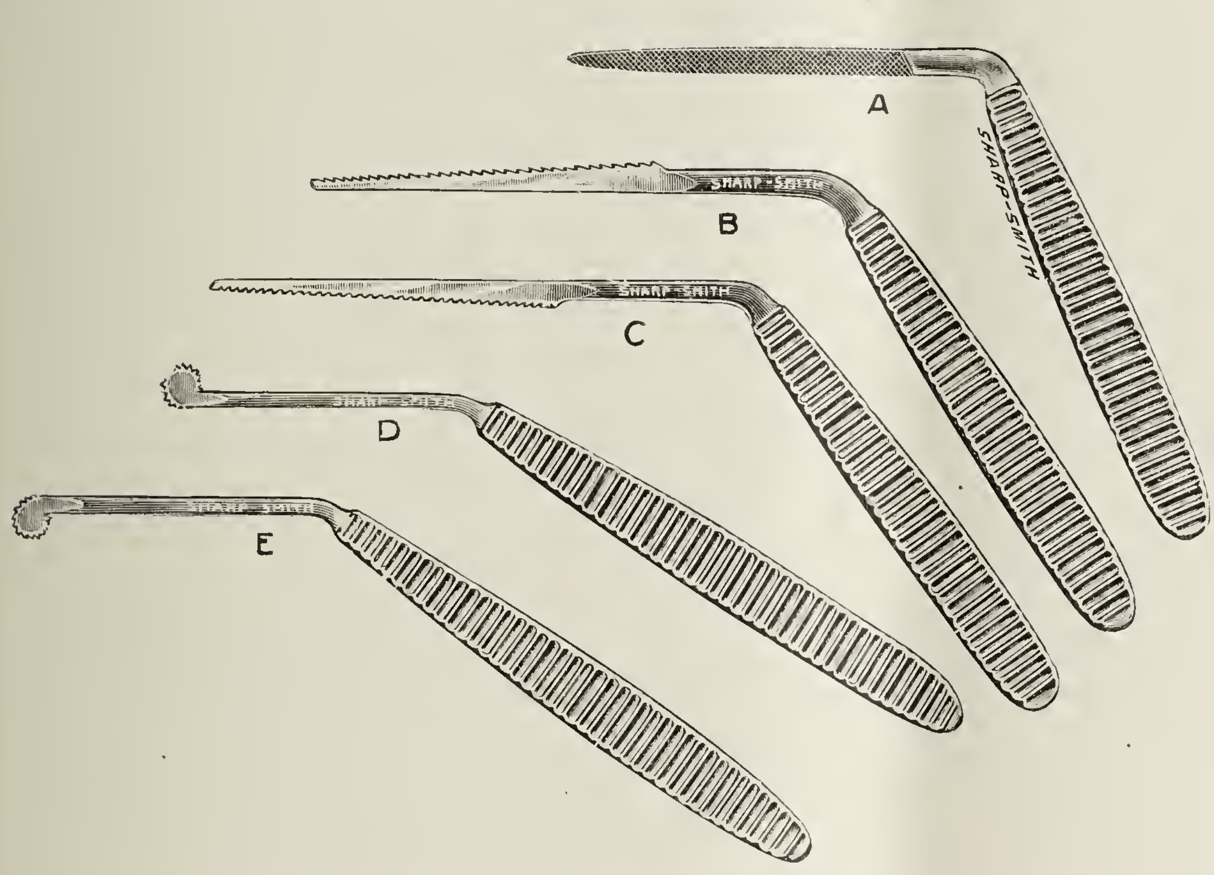
A Pair of Intranasal Rasps.—I am not aware that any rhinologist has ever used this nasal rasp before me. I frequently find small spurs of bone which are hard to remove with a saw or chisel, and for such cases I have devised what I call an intranasal rasp. They are made right and left, for the right and left side of the nose (Fig. A).

Often after using the saw, gouge, or chisel we find that a roughness is left, which when healed leaves an uneven surface. It is very difficult to smooth this surface with a saw. Here the rasp is very useful, and with a few movements it can be made perfectly smooth. Sometimes we find a spur of bone which is very hard and it is difficult to get the saw to take hold of it. In this condition the rasp is very effectual.

The instruments are made to reach far back into the nasal cavity when necessary. The results so far obtained have been very satisfactory.

I claim two advantages over the saw in certain cases: first, the hæmorrhage is less; and, second, the rasp cuts away less of the soft tissue than does the saw, for the reason that the soft tissues recede under the pressure of the rasp because it does not take hold of them readily. When an operation is finished it will be found that invariably the surface of the bony or cartilaginous structures is slightly below that of the soft structure—in other words, more of the hard structures have been removed than of the soft, a result at times much to be desired.

A Pair of New Nasal Saws.—This pair of nasal saws, shown in Figs. B and C, may not appear to have any special feature which would entitle them to publication, when there are so many very good ones already introduced. I allege three points of special merit, which I will briefly describe. First, the saw's teeth are made slightly wider than the blade of the saw, which entirely prevents binding. It is impossible to bind the saw in the bone with this arrangement of its teeth, so long as the saw is driven with caution. I have had to stop operating when using a thin, flexible saw of other designs, on account of its disagreeable binding. The teeth are made to cut with both to and fro movements, and are not deep enough to hang on sharp spurs of bone, which is also very disagreeable. Second, the saw is made of metal which is stiff and at the same time well tempered, which prevents the saw from bending on a spur or ridge. It often happens, when the saw is too thin and limber, that it is hard to get it to take hold, and the end is apt to injure adjacent parts by being curved on pressure. Third, the point is narrow and adapted to the entrance of narrow openings.



A Pair of New Intranasal Saws for Grooving the Nasal Sæptum.—So far as I know, this pair of groove saws is the first of its kind (Figs. D and E). Most rhinologists have heretofore used specially devised gouges or knives for this purpose. My objections to the knife are that it does not cut bone; that the depth of the incision in the cartilaginous sæptum can not be readily regulated; besides, it is very inconvenient to manipulate. In using a knife, a finger in the opposite nostril is the only way to know definitely when the knife is nearing the opposite side. It is rare that the finger can be inserted far enough to be of any service as a guide. The hæmorrhage from an incision with a knife is rather brisk and usually profuse. Other authorities use gouges and punches of various designs to accomplish the same ends.

My groove saws are made in pairs. The cuts given herewith represent them correctly. The saw is round, with the teeth on the convexity, and the blade is sufficiently wide to dip down into smaller curves and cavities where it is very difficult to use a knife successfully. A groove may be made in any direction, almost, except the perpendicular. The saw goes through bone and cartilage alike, and the sensation imparted to the operator as it is about to pass through the cartilage or bone is unmistakable. The finger, or anything else used for a guide, is entirely unnecessary, and wounding the mucous membrane in the opposite nasal passage would be the result of clumsiness. The hæmorrhage is always slight as compared with that from a sharp cutting instrument.

I have also had made a second pair for the purpose of cutting a triangular groove, illustrations of which have not been made. The teeth of this pair are made triangular and are made to cut on the sides as well as on their points, and the groove is made triangular. They are especially adapted for grooving the convexity of a deflected nasal sæptum, and when the sæptum is bent over the triangular groove almost closes up, and if held there the space will be cemented firmly by bony or cartilaginous deposits as the case may be, which is usually sufficient to hold the sæptum in the perpendicular. The first pair described I use exclusively in grooving the concavities of a deflected sæptum. When the sæptum is straightened up, the groove made with this saw is triangular, with its base toward the side operated upon. Organized bony or cartilaginous tissue soon fills this space, which acts in a keystone manner to the sæptum and prevents further deflection. These instruments are made by Sharp & Smith, of Chicago.

Miscellany.

Condensed Milk as an Infant Food; its Uses and Limitations.—In the August number of the *Archives of Pœdiatrics* this question is made the subject of an editorial in which the writer remarks that no rational physician can believe that a food of such strength can form a proper diet for continuous use in any but the youngest infants. So far as it is known, he says, no careful observer of large experience advocates the use of condensed milk alone, because children do not thrive on it. Dr. Holt, he continues, with his immense experience, states that he has as yet never seen a child reared exclusively on condensed milk who did not show, on careful examination, more or less evidence of rickets. Dr. Rotch is also equally positive in his statements.

According to the writer, the number of children over four months of age who are fed exclusively on condensed milk and show no sign of rickets or malnutrition is extremely small. They are frequently fat, he says, but they commonly present striking examples of "fat rickets," and, as a rule, they well fulfill Dr. Kerley's description of them, that they are "an ill-conditioned class of children with their starved muscular and nervous systems and catarrhal tendencies, who fall an easy prey to broncho-pneumonia in the winter, to the gastro-intestinal diseases in the summer, and to the infectious diseases during the entire year." The chief objection to condensed milk as an infant food is the fact that it contains a slight deficiency of proteids and an excessive and almost fatal deficiency of fat.

Concerning the uses and limitations of condensed milk, which is discussed in another editorial in the same journal, the writer is of the opinion that condensed milk can not be changed or fortified so as to render it a desirable food; it may be made permissible, he says, for in many cases it is the only available food, and in some cases the most desirable that can be obtained; nevertheless, its use is not to be advised when a better food can be procured. Sometimes the practitioner is obliged to use it. This occasionally occurs on account of obstinate persistency on the part of parents, but more commonly among the extreme poor, who can not afford a more expensive food.

As the chief objections to condensed milk as an infant food are its deficiency in fat and proteids, he continues, two changes must be made to render it suitable for use; fat and proteid must be added. As the absence of fat is the greater defect of the two, it must receive chief attention. This deficiency may be corrected by the addition of cream—an impossibility among the very poor. If cream is not available, cod-liver oil, as suggested by Dr. Kerley, may be resorted to. It is an excellent substitute and must be regarded as a food rather than a medicine, and should be given continuously, though the daily amount need not be large. The device of using a meat broth, as suggested by Dr. Kerley, for securing the proteid is an excellent one. As an occasional substitute for the broth, white of egg may be utilized to supply the necessary nitrogen. The white of an egg may be thoroughly beaten up with the water with which the condensed milk is diluted. The chief objection to this plan is the difficulty of determining the proper proportions to be employed.

By thus modifying condensed milk, says the writer, a child may frequently be carried with fair success to the ninth month. His chances, however, of reaching that age without rickets will be far better with fresh cow's milk.

One advantage, it must be acknowledged, he says, in the use of condensed milk is the fact that the child is less likely to be fed with an over-strong mixture than when fresh milk is used. One of the most frequent and serious errors in infant feeding is overfeeding. The fact that children do no worse on these excessively weak condensed-milk mixtures is but one of many proofs that they commonly receive more food than they require. If the doctor who is wedded to the exclusive use of condensed milk would not make his fresh-milk mixtures from four to six times as strong as his condensed-milk mixture he would be much better satisfied with fresh milk.

In deciding upon the value of a given food, the physician should not fix his attention upon the present so closely as to forget the future entirely. He should consider the remote as well as the immediate effects of the diet. His office is not alone to tide over a few months and keep a baby quiet at any hazard, but to lay the foundation for strong and vigorous childhood. He will fail to accomplish this if he prescribes a food lacking in its essential elements, though the child may for a few months seem to digest it more readily.

The Danger of Adding Water-gas to any Illuminating Gas Intended for Domestic Use.—In the July number of the *Medical Chronicle* there is a long article on this subject by Dr. J. Dixon Mann, who gives a detailed account of the nature of the danger incurred by this new departure in the manufacture of illuminating gas. That the dangers attending the use of water-gas as a domestic illuminant are far from being hypothetical, he says, the following statistics and cases show:

Dr. Abbott, secretary of the State Board of Health of Massachusetts, stated (*British Medical Journal*, 1891) that previous to the year 1878 coal-gas was generally used in America for illuminating purposes, and that fatal accidents from breathing it were rare. In Massachusetts there was formerly a law which prohibited the manufacture of illuminating gas containing more than ten per cent. of carbon monoxide; notwithstanding the protestations of a large number of medical men, the law was repealed, and water-gas was introduced as a domestic illuminant to an unlimited extent. The result was that in Boston alone, with a population of 450,000, in a single year—1890—the deaths due to the inhalation of illuminating gas were greater in number than those which had occurred from the same cause during the preceding fifty years. In the three large cities of New York, Brooklyn, and Baltimore, which in 1880 contained about 2,000,000 people, only sixteen cases of carbon-monoxide poisoning occurred during the thirteen years previous to the introduction of water-gas—*i. e.*, a little over one case a year. During the seven years and a half after its introduction the number increased to a hundred and twenty, or to sixteen a year; at a still later date the number ranged from twenty-five to thirty a year. In the month of January, 1888, as many deaths from water-gas occurred in New York as had occurred in Boston from ordinary illuminating gas in fifty-five years. This was previous to the introduction of water-gas as an illuminant into Boston; the report last issued, Dr. Mann continues, stated that forty-three cases of poisoning by it occurred there in 1896, many of the deaths being suicidal. Dr. Mann states that the introduction of a powerful poison like water-gas into dwelling houses affords a prompt and easy means of committing suicide, and, as he has had occasion to point out in a recent number of the *Medical Chronicle*, December, 1896, there can be no doubt that an easily accessible means of committing suicide, unrestrictedly placed at the disposal of the public at large, constitutes a direct incentive to the suicidal act.

Up to the present time, continues the author, not many deaths from the domestic use of water-gas have occurred in England, as this dangerous illuminant has only recently been introduced. In some districts, however, where water-gas has for a short time been used as a domestic illuminant it has already caused many cases of accidental poisoning, some of which were fatal. In the district of Garston, near Liverpool, where pure carbureted water-gas was supplied by the gas company throughout the year 1896 (the supply at present consisting of a mixture of water-gas with ordinary coal-gas) many cases of carbon-monoxide poisoning have occurred. Dr. Mann states that he is indebted to Surgeon Lieutenant-Colonel Cayzer, who on behalf of the public vigorously attacked the system of supplying water-gas as a domestic illuminant, for the following case: One was that of a lady, aged fifty years, who was found unconscious in bed on the morning of September 24, 1896; she remained unconscious until the 29th, when she recovered so far as to be able to speak; she died, however, on the 31st. For the first three days the blood was cherry red; afterward it was of normal color. The fatality was due to the escape of gas into the bedroom from a burner the tap of which was not completely turned off; the odor of the gas, however, was so slight that the people in the house did not suspect anything amiss. A second case was that of a man, aged forty-six years, who went to bed at 10.30 P. M., in a room in which there was a strong odor of gas; in the morning he was found dead on the floor. The wife, who slept with him, only felt dizzy and stupefied. At the autopsy the organs were found to be healthy; spectroscopic examination of the blood, which was cherry-red in color, showed that death was due to poisoning with carbon monoxide. In this case the escape of gas took place from a defective joint in a pipe, from which gas escaped and made its way under the floor of the bedroom in which the deceased slept, and from thence into the room itself. A young man, a servant in a hotel, was found unconscious in a room into which gas was escaping; he did not recover complete consciousness for seventy-two hours, but made a good recovery. Several other non-fatal cases, including one of chronic carbon-monoxide poisoning, all due to the introduction of water-gas as a means of illumination for domestic use, occurred in the same district. In a letter to Surgeon Lieutenant-Colonel Cayzer, Dr. Mann goes on to say, a gentleman states that, owing to the mistake of a gas-fitter, an unlighted five-burner gas stove in his cistern room poured gas into the house one day from ten o'clock in the morning to half past six in the evening, and yet "no one in the house had noticed what little smell there was."

It will be observed, he says, that in two of these cases special mention is made of the fact that the odor of the escaping gas was so slight as to pass unnoticed. As previously stated, water-gas is free from odor, and, therefore, unless strongly impregnated with some odorous vapor or gas, it is extremely treacherous, as well as being powerfully toxic.

The points in favor of carbureted water-gas as a domestic illuminant, he continues, are, that it gives an agreeable white light, that it contains no sulphur, and that it is less smoky and requires less oxygen for its combustion than coal-gas does; it is also much cheaper to produce than coal-gas. These excellent properties for a domestic illuminating gas are unfortunately more than counterbalanced by the concomitant dangers. It is not the products of combustion of water-gas that cause the mischief, it is the breathing of air which is contaminated more or less with an admixture of the unconsumed gas. This is brought about in many ways. A bedroom burner is turned low; the flame is afterward extinguished by a current of air, or by water in the pipes, and the unconsumed gas escapes into the room. Defective gas-fittings are another source of danger; even if only a trace of gas escapes, persons repeatedly breathing air contaminated with it are likely to suffer from chronic carbon-monoxide poisoning. People, says Dr. Mann, are quite alive to the danger of using drinking-water which contains mere traces of lead; such water is recognized as a common cause of chronic lead poisoning. They have now to learn that the repeated breathing of air contaminated with water-gas is every whit as dangerous. It is quite true that unconsumed ordinary coal-gas produces disease and danger to life if inhaled, but the risk incurred is vastly increased by the substitution of water-gas. Poisoning by illuminating gas being entirely a question of the percentage of carbon monoxide that it contains, it follows that if the percentage of carbon monoxide is trebled, or quadrupled, so is the poisonous property of the gas. Under certain conditions air contaminated with an amount of coal-gas too small to cause mischief would be converted into a distinct source of danger if the same percentage of water-gas, or of a gas largely composed of water-gas, was substituted for the coal-gas.

Dr. Mann thinks it is much to be desired that a limit should be fixed by law declaring the maximum percentage of carbon monoxide which any gas used for domestic illumination may contain, and such a limit ought not to exceed ten per cent. As the law (or rather the absence of any law on the subject) stands at present the matter is left absolutely to the discretion of gas companies or committees, and consequently in some districts domestic illuminating gas is now being supplied which contains from sixteen to thirty per cent. of carbon monoxide.

Eudoxine in the Production of Intestinal Antisepsis.—Dr. R. W. Wilcox (*Medical News,* July 31, 1897) says that eudoxine passes through the stomach unchanged, but a transformation takes place in the presence of the alkaline intestinal secretions. Owing to the solubility of the liberated salt, not only will the contents of the bowel but also the intestinal walls be disinfected, and the drug again be excreted into the intestine. Wilcox was induced to experiment with eudoxine by the following facts: 1. Lieven reports a permanent and energetic antiseptic action on the bacteria of pus and saprophytes. 2. The dose (five to eight grains thrice daily) is smaller than of similar preparations. 3. The effect of the contained iodine upon the intestinal glands may be a beneficial one.

Fourteen patients treated with this drug suffered from chronic intestinal catarrh; of these, six presented coincident hepatic and cardiac lesions, and naturally, the latter class would be benefited by drugs which would influence the liver and the heart, but the author is sure that the benefit was more rapidly obtained than it would have been without the use of the bismuth preparation. Three patients presented intestinal fermentation, with discharges of muco-pus, considerable pain, and foul-smelling stools. They experienced relief, although one required treatment for several months. Four patients suffered from simple intestinal fermentation; these were permanently relieved. Two patients, both women, suffered from exfoliative membranous enteritis. Both were put to bed and received high intestinal irrigations with salol, with a carefully arranged diet and general supervision of all matters which were conducive to the restoration of health. In addition, eudoxine was used in maximum doses. Both patients have now passed some months (one three, the other two) without the passage of shreds of membranes. Nine patients presented symptoms of both gastric and intestinal catarrh. They all improved and the final result was satisfactory. Two patients presented themselves suffering from acute catarrhal duodenitis, with cutaneous itching, absorption jaundice, tender liver, and clay-colored and offensive stools. Both were relieved as far as their intestinal symptoms were concerned, although calomel in small doses at hourly intervals was given. Both presented well-marked conditions, and it is certain they obtained relief from the intestinal decomposition with more than usual rapidity.

The General Practitioner and the Singer.—In the August number of *Medicine* Dr. Loeb calls attention to the pernicious results of singing instruction and practice where physiological principles are lost sight of, and he suggests to the general practitioner the means of obviating and relieving many of the resultant conditions.

The mass of teachers, he says, do not understand either the anatomy or the physiology of the organs concerned in the production of voice; many have not even the slightest idea of the necessity of normally acting organs for the proper expression. On the other hand, he continues, the physician fails to interest himself sufficiently in the well-being of the singers among his patrons, and to realize the great amount of good to be accomplished by attention and the harm by inattention to the simple details of voice hygiene and treatment.

Dr. Loeb refers to the serious consequences arising from mouth-breathing and the chronic throat affections which result therefrom, causing temporary or permanent impairment of the speaking as well as the singing voice. Too much stress can not be laid, he says, upon the physiological and hygienic importance of the nose; too few realize its wide influence and important bearing upon the comfort and health of all classes. The conditions which occasion mouth-breathing are exceedingly numerous, and are most frequently found in children, to such an extent that the habit should be corrected ten years before vocal instruction is given.

If a singing teacher, says the author, who knows nothing or cares nothing about the necessity of nasal instruction has a pupil who suffers from one of these conditions, the natural result will be to encourage oral respiration, and thereby to increase the burden already placed upon the pharynx and the larynx. Many teachers, he says, advise oral respiration, even where nasal respiration is easy, on the ground that in singing it is frequently necessary to take a breath so quickly that one does not have time to close the mouth and thus breathe through the nose. Whether this is true or not, Dr. Loeb thinks it certainly does not warrant mouth-breathing at times when it is not called for, also that by appropriate training one may be taught to breathe quickly through the nose, even though the mouth is wide open.

The part which the lungs and chest walls play in respiration and in singing should, he continues, be well understood by both teacher and physician. Advanced teachers not only realize their importance, but insist upon the most thorough practice in the direction of perfecting their action even before any considerable attention is paid to the technical part of vocal practice.

Great attention to the proper expression of respiratory action is essential, says the author, for any one who desires to avail himself to the fullest of the possibilities of vocal culture. The lungs are conical in shape, with their apices upward and their bases downward, in relation with the diaphragm, which in its turn constitutes the roof of the abdominal cavity. Increasing the capacity of the apex permits therefore the entrance of far less air than when the capacity of the base is increased, in view of the far greater size of the base of the cone than its apex. And, following the same argument, a singer who is taught upper-chest breathing does not have the air capacity which is developed by the singer taught to use the lower-chest type.

The air in the former instance is less in quantity, and, what is worse, less under the control of the will. Instructors are giving up the exclusive abdominal type of respiration which is accomplished by exaggeration of diaphragmatic movements and by unusual action of the abdominal walls, and are now accepting the most rational type, the inferior costal. By this plan of respiration the chest capacity is increased to its greatest possibility with an ease, comfort, and naturalness that are surprising. Some, says the author, notably Curtis, advise the fixation of the upper chest, an aid whose influence is not to be disputed.

Dr. Loeb states that he considers it necessary to go into particulars on the subject of respiration in singers, for, he says, so few vocal instructors appreciate its importance. There are rules which are scientifically laid down, and can readily be learned, which will change high-chest breathing into normal low-chest breathing; this, of course, involves attention to the dress of the individual. During exercises, continues Dr. Loeb, the corset must be discarded, and the success will be far greater if it is altogether relegated to the domain of cast-off clothing. No one, he says, can hope to attain proficiency in breathing while persisting in waist or lower-chest constriction which crowds the middle and lower portion of the lungs into the apical region. There should be no interference with the perfect movements of the ribs and sternum.

Great attention must be paid to the dress, habits, and exercise of singing pupils. Without proper exercise the voice can not be sturdy, true, or lasting. It partakes too much of the characteristics of a hothouse plant and too little of that outdoor vigor which Nature intended. Dress should be adapted to the end that the capricious climate under whose influence we live may have no detrimental influence upon the health of the individual.

The cold bath is an important adjunct to the singer's health as well as to the conservation of his voice. A daily plunge or at least a cold sponge-bath is seldom contraindicated, and almost always exercises a beneficial influence in toning the system and in preventing successive attacks of acute inflammation of the nose and throat.

The practitioner, continues Dr. Loeb, must even inquire into the character of instruction and practice of the singer, with a view of ascertaining whether or not the pupil is being led into a forced method of singing which will be detrimental to the singing life. Of course, he says, there are many points in this connection which can be fully understood only by the closest application and study. There are, however, many common errors which are self-evident and which can be readily corrected. For instance, the time of practice should not be prolonged, on account of the tendency of the vocal organs to tire under the influence of the unusual strain. The practice should be divided into spells of not more than fifteen minutes in duration, which should be followed by a period of rest. No vocal practice should be indulged in when there is any acute inflammation of the pharynx or larynx, and it should be limited or interdicted when there is an acute nasal inflammatory attack. Conditions causing nasal obstruction should be corrected before any considerable practice or instruction is undertaken.

Dr. Loeb's conclusions in this matter are as follows: 1. Nasal respiration is imperative and all interference should be removed. 2. The physiological respiration and adequate air power make inferior costal respiration essential. 3. The practitioner should pay attention to the general health and hygiene of the singer, insuring proper exercise, dress, and freedom from pernicious habits. 4. The details of instruction and practice should, as far as possible, be subjected to the scrutiny of the practitioner, with the view of obviating practices which are in opposition to the normal action of the nose and throat.

Larkspur Poisoning in Cattle and Sheep.—From the observation of several cases of larkspur poisoning which happened in Montana early in the spring, says Dr. M. E. Knowles, the State veterinarian, at a time when the blossoms and seeds had not yet been produced by the plants, there seems to be no doubt that the poisonous principle in larkspur is distributed throughout the whole plant (root, leaf, flowers, and seeds), and therefore poisoning may occur at almost any time during the life of the plant. A number of serious and extensive losses among both cattle and sheep have come under his observation in Montana during the past three months, the most serious among sheep. He ascertained upon close investigation that cattle and sheep were most likely to eat the plant and become poisoned when they were on a range short of grass or when turned immediately into a locality while hungry and in a condition to eat any plant in sight. The common symptoms of poisoning in sheep and cattle are manifested first by the animal straying behind the herd and appearing dull and indifferent to its surroundings, but if suddenly startled it will walk in a directly straight line until it meets some obstruction, when it probably falls, makes but few struggles, but lies remarkably quiet under the influence of the poison. There is rarely any bloating or hoven, but in nearly all cases there are dribbling of saliva from the mouth, champing of the jaws, and frequent attempts at swallowing.

The treatment most successfully applied has been by pouring water of ammonia on to a rag or sponge and holding the same to the animal's nose until it fully inhales the fumes of the ammonia; it is sometimes necessary to pour five or six drops of ammonia into the nostrils. The administration every ten or fifteen minutes, to sheep, of a teaspoonful of ammonia water in half a cup of water, and the administration of alcohol (in tablespoonful doses), diluted with three times this quantity of water, every fifteen or twenty minutes will be found beneficial when ammonia does not promptly relieve the animal. Where it is possible, and the drug is accessible, a hypodermic injection of the sixtieth of a grain of atropine sulphate to sheep and one grain to cattle will bring about a cure or relieve the poisoning in a rapid manner, often reviving them when they are apparently beyond help. Digitalis and tincture of nux vomica in small doses are also useful and frequently bring about a cure very promptly.

The Yellow-fever Bacillus.—From a morphological point of view, says M. J. Sanarelli in the *Semaine médicale* for July 7th (*Indépendance médicale*, July 28th), this bacillus is like a small stick with rounded ends; it is found in pairs in cultures and in small groups in the tissues; it varies in length from two to four μ, and is generally two or three times as long as it is wide; it is rather polymorphous.

The author states that searching for it in the tissues gives unsatisfactory results, except in cases in which the death of the patient occurs without secondary septicæmia. Also in cases in which the bacteriological result is the most distinct it is not easy to ascertain the presence of the icteroid bacilli on the sections of tissue because of their number being often restricted. Nevertheless, it is possible to find these microbes in the organs more frequently united in small groups, and located always in the small capillaries of the liver, the kidneys, etc.

The best means for demonstrating not only the presence of the icteroid bacillus, but also its tendency to localize in small groups, especially in the capillaries, consists in taking a piece of the liver of a person recently dead, and keeping it in a steam bath at a temperature of 98.3° F. for twelve hours, so as to facilitate the multiplication of the specific microbe.

The bacillus of yellow fever, says M. Sanarelli, is rather easily developed in all the ordinary nutritive media. In cultures in patches and on ordinary gelatin it forms round, transparent, and granular colonies which present during the first three or four days the appearance of leucocytes; later, the granulation of the colony becomes more intense and, ordinarily, a central or peripheral nucleus, completely opaque, is formed; after a time the colony itself becomes altogether opaque and never liquefies the gelatin. The striated cultures on gelatin, which are indirectly solidified, are developed in the form of brilliant and opaque drops similar to drops of milk. In bouillon the icteroid bacillus is developed slightly without forming films or flaky deposits. In solidified blood serum it grows in an almost imperceptible manner. The cultures on gelose, on the contrary, differ from those which occur in the case of the majority of the known pathogenic microbes, and represent for the icteroid bacillus a diagnostic measure of the first order, but only in certain conditions.

When the colonies are developed in the steam bath their appearance does not differ from that of a number of other microbian species; they are round, of a grayish color, somewhat iridescent, and transparent, with a smooth surface and regular borders. If, instead of developing them in a steam bath at a temperature of 98.3°, they are allowed to grow at a temperature of from 71.3° to 78.4° F., the colonies will have the appearance of drops of milk, opaque, prominent, with a pearly reflection, and completely different from those developed in the steam bath.

This difference in the development, says the author, may be made use of by subjecting the cultures for twelve or sixteen hours at first to the steam bath, and afterward to the ordinary temperature for the same length of time. The colonies will then be seen to consist of a flattened central nucleus, transparent and bluish in color, surrounded by a prominent and opaque peripheral circle, and presenting, as a whole, the appearance of a wax seal. This characteristic, M. Sanarelli thinks, should be considered, for the present at least, as specific, and, as it is developed in less than twenty-four hours, it serves to establish very rapidly and surely the bacteriological determination of the icteroid bacillus. Aside from this morphological characteristic, which enables us to distinguish the microbe of yellow fever from all others which are known, the icteroid bacillus is endowed with some interesting biological properties.

It is an ectogenous anaerobion, and does not resist Gram's coloring; it imperceptibly causes the fermentation of lactose and more actively that of glucose and saccharose, but it is incapable of coagulating milk; it is very resistant to desiccation, dies in water at 140° F., and is killed by the sun's rays in seven hours; it lives a long time in sea water.

The specific microbe of yellow fever, M. Saranelli states, is pathogenic in the majority of domestic animals; few microbes have a pathological domain that is so varied and extended. The steatogenic properties are manifested with a much greater intensity if the animal experimented upon occupies a high rank in the zoological world.

The congestive and hæmorrhagic properties, while being common to various kinds of virus, constitute, through the anatomical location where they preferably exert their influence, a very marked specific characteristic. It is to them, in fact, that not only the classic vomiting of blood and the various hæmorrhagic manifestations are due, but also the congestion of the blood-vessels, which is the principal cause of the pathognomonic pains in yellow fever.

Its emetic properties, while they are not so strictly specific as those previously mentioned, give to this virus, by the rapidity, the intensity, and the persistence with which they are manifested in man and the higher animals, a pathogenic characteristic which enables us to distinguish it easily from all the other viruses known at the present time.

The comparative rarity with which the icteroid bacillus is found in the human organism and the violence of the symptoms which may be provoked in the dog soon after the intravenous injection of a comparatively abundant culture would lead to the supposition of the existence of a very active specific poison. The author studied this poison, which was obtained by simply filtering a culture of the icteroid bacillus which had been in bouillon from five to twenty-five days.

The yellow-fever poison tolerated, almost with impunity, steaming at 152° F., but the temperature of boiling water perceptibly weakened it. The author also studied the action of this specific poison on the guinea-pig, the rabbit, the dog, the cat, the goat, the donkey, the horse, and man.

The experiments on the human subject were five in number. The injection of a filtered culture, in a comparatively weak dose, produced in man typical yellow fever accompanied by its anatomical and symptomatic train. This fact, the author thinks, not only is a convincing proof of the specific value of the icteroid bacillus, but establishes on new lines the ætiological and pathogenic conception of yellow fever, and shows that all these symptoms are due only to the poison produced by the microbe circulating in the blood.

All the symptomatic phenomena, all the functional alterations, and all the anatomical lesions of yellow fever, he says, are the result only of the steatogenic, the emetic, and the hæmatolytic action of the toxic substance produced by the icteroid bacillus.

The Treatment of Gout.—In the *Journal of the American Medical Association* for July 31st Dr. H. C. Wood, of Philadelphia, remarks that in treating gout we should rid ourselves of false ideas and recognize the importance of this great principle, not to attempt to treat gout at all, but to treat the individual.

Concerning the question of diet, he states that he has seen gouty patients in whom a single piece of ordinary red roast beef would bring on a furious attack, and, on the other hand, others who did not get well until they were put upon a red-meat diet. Again, he has seen gouty patients who went right down if they took starch or sugars, and those who had to take both starch and sugars in order to be built up. There is no diet for gout, he says, it is diet for the individual; therefore the first principle in the diet of gouty subjects is to adapt it to the individual.

Concerning the treatment of gout by exercise, this is the one thing which does more good than anything else in almost every case, provided, says Dr. Wood, the right amount of exercise is taken. Massage is a form of exercise, and it may be all that a patient can endure. The whole secret of exercise in gouty persons, he says, is to keep within the point of causing exhaustion and gradually increase the amount each day if necessary, and it will do more good than any drug. Dr. Wood, in this connection, speaks a good word for the bicycle, and calls it the "great calisthenic of the world."

With regard to drugs, Dr. Wood does not believe that salicylates cure gout or rheumatism, but that they simply aid in keeping down the diathesis; if there is any cure, he thinks it is exercise. In certain cases, he says, which approach typical gout, rarely seen in America, colchicum does much more good than the salicylates; sometimes the best results may be obtained by a combination of colchicum with the salicylates.

Dr. Wood considers sodium salicylate the worst salt that can be used, although it is, perhaps, not so bad as salicylic acid; it is, however, much more apt to turn the stomach, and is less effective and more depressing than the other salicylates. The two salts which he considers truly useful are the ammonium and the strontium salts; the former acts immediately and severely, and the latter acts slowly. In an acute case he advises the strontium salicylate or the two combined. The strontium salt, he says, has the advantage of not deranging the digestion, and sometimes has the best effect on the intestinal condition. In a large majority of cases, continues Dr. Wood, the salicylates produce depression and perhaps a little nausea and general wretchedness, in which case these effects can be overcome by combining the salicylates with digitalis and strychnine.

Baths, says the author, can not cure a diathesis, but they are useful. Hot baths, steam baths, and Turkish baths should be employed, the latter once a week, by gouty patients. Kidney disease and atheroma, he says, will be far less rife if we use the hot bath more than we do. The baths eliminate and give a temporary result.

Regarding the Tallman-Sheffield apparatus, or dry heat method, says Dr. Wood, this is not going to cure the gouty diathesis any more than other applications. In his experience he has found that it has very little value in rheumatoid arthritis and in chronic inflammations in the joints, even if they are of a purely gouty character. On the other hand, he says, if there are deposits in the tendons and outside the joints, if there is traumatic synovitis, whether in baseball men or other persons, the results of this treatment seem almost marvelous. Also in acute strains and tendinous inflammation this dry heat is of great value. In subacute rheumatism Dr. Wood thinks it is of value owing to its sweating and other local action, but, in his experience, not in chronic cases of rheumatoid arthritis, and it is of very little use in rheumatism of the joints.

Lectures and Addresses.

THE PRESIDENT'S ADDRESS,

DELIVERED BEFORE
THE AMERICAN LARYNGOLOGICAL ASSOCIATION
AT ITS NINETEENTH ANNUAL CONGRESS.

By CHARLES H. KNIGHT, M. D.

In accordance with custom, it becomes my agreeable duty to extend a cordial greeting to you all, and especially to our guests, both from this country and from abroad, who honor us by their presence. I trust that this occasion may be rendered memorable, not only by the warmth of our welcome, but by the zeal and earnestness of our scientific labors.

As your presiding officer, it is my privilege to occupy a few moments in reviewing the affairs of the association, and in referring to various matters of possible interest or importance. I wish to take advantage of my position to say a word or two upon a subject which has been recently forced upon my attention by several circumstances. When we become absorbed in professional work, especially in clinics, and are thrown into familiar contact with infectious disease, we are apt to become careless as to certain safeguards which involve both ourselves and others. A series of cases has impressed upon my mind with startling reality the lamentable consequences of neglect of those precautions as to instruments and manipulations which we are all supposed to observe. In view of the possibilities of infection thus acquired and perhaps for a long time unrecognized, it has seemed to me worth while to call your attention to the subject. In our special work there is particular liability to mishaps of this kind, since specific lesions of the mouth and fauces are extremely common, and are among the most contagious of morbid phenomena. It is unnecessary to detain you by going into details as to methods, well known to all of you, by which such accidents may be avoided.

Closely allied to this subject is that of septic infection in general. In the growth of our specialty surgical procedures in the upper air-passages have assumed important proportions. Absolute asepsis in the wounds we are in the habit of inflicting may be impossible and, in view of the satisfactory drainage usually insured, unnecessary. In this connection it is a pleasure to refer to another circumstance which has doubtless already attracted your notice, as a revelation of what may be accomplished by earnest, intelligent study of scientific problems. At the last meeting of the British Association for the Advancement of Science the story of the birth of antisepticism was told in an unassuming way by that distinguished surgeon who more than any one now living has contributed to the advance of surgical science. We shall begin to appreciate the importance of that epoch which he describes when we hear that in a single day hospital gangrene was banished from the Allgemeines Krankenhaus, of Munich, by the adoption of Professor Lister's principles. We are told that pyæmia and erysipelas also soon disappeared, and that the transformation in his own wards in the Glasgow Royal Infirmary was almost equally marvelous. In reading Lister's masterful address, one sentence in particular caught my eye. He has been reviewing the question of putrefaction in wounds, and to illustrate the desperate state of affairs at the time he began his researches, he mentions that Syme, to whom he refers as "the safest surgeon of his time," was inclined to believe that amputation, rather than any attempt to save the limb, was the proper course to pursue in all compound fractures of the leg. In his search for some way of preventing putrefaction, he remarks: "I had done my best to mitigate it by scrupulous ordinary cleanliness and the use of various deodorants." No positive results were obtained until he began the use of carbolic acid, to which he still adheres as the safest and most effective antiseptic.

Whether we accept with Lister the germ theory of disease and the principles of antisepticism, or discard with derision every antiseptic detail; whether we pin our faith to germicidal agents known to be fatal to bacterial organisms, or endeavor to combat "certain specific poisons of unknown nature" in accordance with rules of simple cleanliness, it is obvious that there are *degrees* of cleanliness, and that the more rigid our observance of careful methods of practice, the greater will be the reduction in the chances of infection from whatever source. It may be difficult, and perhaps unnecessary, to shut out every septic germ from the upper air-passages, but we may readily exclude the commoner and coarser forms of wound infection.

In looking over the eighteen volumes containing the record of our labors, we shall find cause to congratulate ourselves upon the spirit of wise conservatism which has characterized our work. We may flatter ourselves that we have not been carried away by fads of the moment. In the wild haste to gain fame and fortune from a new idea, the temptation is strong to present crude and untried theories as established facts. The premature announcement of new cures for tuberculosis, which experience has proved to be inert or injurious, has taught us a healthy skepticism. It is well, however, to cultivate a judicial temper of mind and not reject everything new, because of its novelty, without thorough trial. Statistics are, no doubt, misleading; but every allowance being made for variation in severity of epidemics and for other modifying conditions, there is reason to hope that in diphtheria antitoxine we have an agent capable of, at least, restraining the ravages of that terrible scourge. The spirit in which the question is still being investigated, especially by the American Pædiatric Society, can not be too highly commended.

With the marvelous growth of specialism in medicine laryngology has more than held its own. Nevertheless, we not infrequently hear the question asked, After all, what has the laryngoscope accomplished, especially with relation to the development of the singing voice? I fear that we shall be compelled to admit that it has done little or nothing more than corroborate theories and knowledge acquired in other ways. Vocalization is a very complicated process. On the one hand, we know that a normal larynx is essential to a perfect voice; on the other hand, we know that one may learn to speak intelligibly without a larynx, by means of the aid provided by the accessory organs. These accessory structures—the lips, the teeth, the tongue, the palate, the pharyngeal wall, the nasal chambers, and the bones of the skull—all contribute their part to vocal function. An imperfection, a deviation from normal conformation or proportions in any one of these, must inevitably modify the quality of the voice to a degree more or less perceptible. While we are by no means agreed as to all the elements concerned in the correct production of the singing voice, it may be said that nearly all the information given by the laryngoscope as to the movements and position of the vocal bands during tone formation had been already furnished by dissection of the larynx. We knew beforehand, from the attachment of the intrinsic muscles of the larynx, what must be the action of individual fibres in accordance with well-known mechanical laws. The laryngoscope does not tell us why, of two individuals, with apparently identical vocal apparatus, one is a great vocalist and the other can not sing a note. Nor does it tell us why a singer with a voice of fine quality and perfect intonation, and used in accordance with a so-called good method, fails to thrill us. In other words, no scientific theory and no instruments of precision will discover that musical instinct, that artistic temperament, which inspires the voice of every great singer. No more trying ordeal confronts the medical practitioner than the attempt to manage the case of a youthful aspirant for lyric honors to whom Nature has denied those gifts essential to success. On the other hand, he experiences no more intense satisfaction than in proving his ability to restore a lost voice or in giving such advice as will assist in its recovery. Here, then, is the chosen and successful field of our art. An individual comes to the physician with hoarse, husky, or whispering voice. No one can deny the importance and feasibility of determining with accuracy, in most cases, the site of the difficulty—whether it be a fault of innervation, a defect of muscular action, a neoplasm or overgrowth of tissue, or a simple inflammatory condition. In the detection and relief of disease, and in thus protecting and preserving the singing voice, the laryngoscope will continue to be of inestimable value.

We are compelled with regret to chronicle the occurrence of two breaks in our ranks since we last met—one owing to the resignation of Dr. Clinton Wagner, of New York, and the other to the death of Dr. Charles M. Shields, of Richmond, Virginia. Dr. Wagner was one of the original members of the association and has added not a little to the fame of our organization.

In the death of Dr. Shields we have lost a most genial and accomplished gentleman. During the few years he had been with us his industry, his exceptional mental endowments, and his attractive personality had fully vindicated his title to membership. He joined the association in 1893, and had been an active and efficient fellow. The announcement of his death will be heard with sincere sorrow.

A suggestion or two as to our management may be permitted. In the first place, let me ask you to consider the propriety of increasing our annual dues. You are made painfully aware about every three years of a deficiency in our revenues by a call from our worthy secretary for an extra assessment. It seems to me and to some other members of the council that a slight addition to our income would be desirable, not only to forestall our triennial exigency, but to provide us with a fund for other purposes. For example, it would be eminently proper for this association, as a body, to be represented on the subscription lists of memorials to distinguished members of our profession who have passed away. Individually our response to such calls is always liberal, but as an organization it seems to me we should recognize movements of this character.

Another purpose to which a part of a surplus fund might be devoted is the collection and preservation of instruments devised by members of the association. At our meeting in 1894 a committee was appointed to consider this matter. The plan they suggested of necessity involves more or less outlay. If suitably provided for, such a collection would be of interest and value.

Still another project has long been in my mind, but may seem to you impracticable and utopian—namely, the establishment by this association of a bulletin, or periodical, which should be not only the official organ of this society, but the mouthpiece of all American laryngologists. In view of the long list of names of those more or less identified with our specialty in this country and of the voluminous literature relating to diseases of the throat and nose, it seems not unreasonable to expect that such a publication would receive adequate support. The realization of this hope may not be impossible, and I venture to commend the idea to your serious consideration.

No reference to the events of the year which has elapsed since our last meeting would be complete which failed to mention the continued interest manifested in the new world opened to us by the Röntgen ray. We may take pride in the fact that one of our corresponding fellows, Dr. John Macintyre, of Glasgow, has been especially active and successful in experimenting with this wonderful discovery. It remains to be seen whether it will be of any practical value to us in our special line of work. In locating foreign bodies and in determining the dimensions of tumors and the extent of infiltration in malignant disease, it may prove to be of service.

At the meeting of our association a year ago a committee was appointed to draft a memorial to Congress protesting against the adoption of a bill to restrict vivisection. In our business meeting to-morrow we shall hear more in detail of this matter. Let me remind you, however, that it becomes us to approach this subject with caution, and at the same time with candor. Such apparent brutalities are said to have been committed in the name of science that we can hardly wonder at the earnestness of those who oppose vivisection. On the other hand, the extravagant and intemperate language of some fanatical antivivisectionists is most exasperating. If scientists may be justly charged with misrepresentation, surely the arguments of their opponents have, in many cases, descended to vituperation. While the question would seem not to concern us very closely as specialists, yet we find that one of our fellows, whose memory we cherish, was a particular object of attack by certain champions of the dumb animals. You have not forgotten the warm discussion which took place at our meeting in New York, in 1887, when our lamented friend, Hooper, read his paper on the Anatomy and Physiology of the Recurrent Laryngeal Nerves. With the exception of that paper and others by him, and of contributions in a similar line by Donaldson, the record of our work in our published *Transactions* contains little or nothing which may be fairly regarded as the product of that barbaric ferocity which is supposed to characterize the bloodthirsty frequenters of the physiological laboratory. Yet the subject is one of vital interest to all scientific physicians. Who shall say that vivisection has accomplished nothing, has bestowed no boon upon humanity in view of the achievements of Harvey and of Magendie, of Claude Bernard, of Pasteur, and of our own investigators? The jubilee of anæsthesia might not have been celebrated last year had sympathy for the lower animals prevailed. Without preliminary tests even Morton, with all his courage, would hardly have dared to apply his beneficent discovery to human beings. Thus the race might have been long deprived of that blessed immunity from pain which it has enjoyed for the last fifty years. The lives and the sufferings of thousands of such animals as are used in experimentation are not to be considered if a single fact which may improve the health and increase the happiness of mankind may be established. More than that, we claim that vivisection is justifiable and should be permitted as a means of impressing certain important phenomena upon the minds of students in our schools, not indiscriminately to a general medical class, but to the more advanced and special students in pathology and biology. As a stimulus to interest, as an incentive to study, and as a means of perfecting technical skill, vivisection is a valuable educational resource. No reasonable man can object to restrictions which look to the prevention of wanton cruelty, but those contemplated by the bill and urged by ill-informed agitators of the question would practically prohibit animal experimentation in the District of Columbia. The adoption of the proposed measure would be merely a step to the introduction of similar bills elsewhere, with the result of eventually closing all our schools for biological research. Erelong we should reach the condition of our English cousin, a celebrated surgeon, who, bemoaning the difficulties of vivisection under the stringent law of Great Britain, remarked that he had filled many graveyards with human beings in learning intestinal surgery. Probably our friends are not aware that they are offering themselves as substitutes upon the sacrificial altar of science. What shall we say of the sickly sentimentalism which evokes spasms of maudlin sympathy over the death of a worthless dog and sits with folded hands before the horrors of the unspeakable Turk, or denies to suffering humanity hope of exemption from disease, the study of which may be most readily conducted upon the lower animals? A distinguished Philadelphia physician is being extensively quoted as representing the more enlightened sentiment of the profession. One of his points which our "humane" friends have taken up with great alacrity refers to the ingenious contrivances for confining animals in position for vivisection. The necessity for such apparatus is thought to indicate that the anæsthesia employed "is frequently nominal rather than real," whereas the immobility of human beings in surgical operations is secured by profound anæsthesia. I should hesitate to invite this tender-hearted gentleman to witness one of my own operations for adenoids, in which the reflex, unconscious struggling of the patient under partial anæsthesia and while the operation is in progress would surely appall the souls of our gentle critics. The childlike reasoning which jumps at the conclusion that every movement of an animal or of a human subject under anæsthesia is an index of pain, is quite in keeping with most of the arguments against vivisection, and only merits attention because persistent repetition of even the most baseless of statements finally gives it a certain authority. It is to be hoped that the good sense of our lawmakers will enable them to relieve the question of the plausible sophistries and silly calumnies associated with it by ignorance and prejudice. Let it be our duty to show the world that we are not actuated by motives of frivolous curiosity. Let us endeavor to disabuse the public mind of the notion that we are a cruel and heartless band of inquisitors. Let us demonstrate the fact that many of the advances in surgery and therapeutics hitherto made have had their origin and confirmation in experiments upon the lower animals, and that one of our great hopes for future progress in these departments rests upon further intelligent and unhampered exploration.

In conclusion, let me again express my keen appreciation of the honor you have done me in choosing me to preside over your deliberations. May I, without im-propriety, express the hope that no shortcomings of mine may by contrast add brilliancy to the official career of my illustrious predecessors? To that end permit me to crave your forbearance. It now gives me pleasure to invite your attention to the programme which has been prepared for your consideration, and to declare the Nineteenth Annual Congress of the American Laryngological Association open for business.

Original Communications.

GUAIACOL
AS A LOCAL ANÆSTHETIC IN MINOR OPERATIONS ON THE NOSE AND THROAT.*

By JAMES E. NEWCOMB, M. D.,
LARYNGOLOGIST TO THE DEMILT DISPENSARY
AND TO THE OUT-PATIENT DEPARTMENT OF THE ROOSEVELT HOSPITAL.

THE old advice "to let well enough alone" is as applicable in medicine as elsewhere. Considering the ease and comparative lack of disagreeable by-effects with which local anæsthesia for minor operations on the nose and throat is obtained with cocaine, the query naturally arises, Why seek further? In reply it may be said that cocaine is not always devoid of very unpleasant and even alarming after-effects, and it is always assuring to have more than one string to one's bow.

Several substitutes have been suggested for cocaine. Perhaps the most prominent rivals have been eucaine and tropococaine. The former has the advantage of not spoiling when kept and of not being decomposed by heat. It is said to dilate rather than contract the blood-vessels. I have had no personal experience with either of them, and they do not seem to have come into any extended use.

In 1895 Lucas-Championnière brought up before the Academy of Paris † the question of the possibility of using guaiacol for local anæsthesia. The matter had been suggested to him by André, a Parisian chemist.

First, a word about guaiacol itself. It is, as you know, the active principle of creosote. The latter itself is not a definite product, but a mixture containing, along with guaiacol, toxic cresols and toxic derivatives of pyrogallol. Liquid guaiacol is never quite pure, as it contains only seventy-five per cent. of the pure substance. Chemically pure guaiacol is a pharmaceutical possibility, but, like all the phenols, it is too irritating to be used except in very small doses. Moreover, it has an offensive odor and a burning, bitter taste.

Raymond ‡ and others have suggested its employment by friction in cases of acute tonsillitis; so also Scroda.#

Lucas-Championnière advised its employment by incorporation into ointments and its subcutaneous injection for local anæsthesia in various minor surgical conditions. He found its employment without danger, and offering as complete anæsthesia as did cocaine. At first it was dissolved in oil of bitter almonds. The amount employed for injection was five centigrammes of a five-per-cent. solution. In tooth extraction painful sensation disappeared, while tactile remained. At first, some eschars appeared on the tongue, but these were referred to a bad method of injection and an initial defective solution. Anæsthesia was fair in five minutes after injection and complete in seven or eight.

In the discussion following the paper above alluded to Magitot suggested that the remedy was hypothermic, antipyretic, anæsthetic, and analgetic. Laborde declared that it possessed an intense vaso-constrictor action, to which the sloughs could be assigned. Ferrand found hypothermia, lypothymia, and even incipient collapse follow its use, but no alarming accident.

Its first definite application in the special field of laryngology was made by Laurens.* This writer found it necessary to purify the oil before the introduction of the guaiacol. This special mode of purification is hereinafter referred to. In aural practice he advises the preliminary cleansing of the ear with some warm alkaline fluid, then with an antiseptic, and finally the instillation of five or six drops of the warmed guaiacol solution. This is left in for some fifteen to twenty minutes and then withdrawn with hydrophile gauze. Under these circumstances he was able to perform paracentesis of the drum. It is worthy that the remedy succeeded here in a field where cocaine is of little benefit. His first case was that of a nervous patient convalescent from typhoid fever, and the puncture caused but very little pain. In his second, a neuropathic individual, the anæsthesia was incomplete, but the puncture was effected with but very little annoyance to the patient. He ventures to observe that guaiacol may be of service in incising furuncles of the meatus.

In the nose, he advises the laving of the operative field two or three times with the solution, and then the application of a saturated tampon in the usual manner. To produce anæsthesia a much longer time is required than with cocaine. Fifteen to twenty minutes, however, suffice for an ordinary intranasal operation. Laurens made seven cauterizations of the inferior turbinates. In four there was complete anæsthesia, and in the remaining three only a slight sense of burning. He noted, as an effect of the application, only a slight retraction of the tissues, and this was probably due to the massaging of the erectile bodies. At first, indeed, there may be an initial tumefaction of the tissues. Hence guaiacol can never be as serviceable as cocaine where we wish to make a methodical examination of the nares, or in cases of supposed reflex neurosis, to determine the possible existence of sensitive areas.

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* Read before the American Laryngological Association at its nineteenth annual congress.

† *Bull. de l'Acad. de méd. de Paris*, July 30, 1895.

‡ *Medical Record*, March 24, 1894.

# *La Sem. méd.*, No. 27, 1894.

* *Ann. des mal. de l'oreille*, xxii, 1896, p. 9.

The same thing is true with reference to the so-called mucous polyps. The cold snare was used in six cases of the latter without pain, and a like happy result followed in one case where the hot snare was used in polypoid degeneration of the middle turbinate.

In the pharynx Laurens found anæsthesia more difficult to obtain, owing to the reflex movements which the remedy caused. He bathed the operative field thoroughly three or four times. He records five cauterizations of voluminous granulations of the buccal pharynx (three being in women) without pain, three of tonsils in infants with a like happy result, and two of removal of tonsillar tissue by forceps (*traitement par morcellement*). The remedy proved a failure in one case of attempted removal of a tonsil with the hot snare. Laurens also corroborates the statements of Raymond as to the efficacy of guaiacol in acute amygdalitis, a daily application causing an abatement of all local symptoms for twelve hours.

In the larynx the slight absorption of the remedy proved an obstacle to satisfactory anæsthesia. There might have been a possible utility in submucous injections, but these were not tried. Repeated applications were necessary to cause the slightest deadening of local sensibility.

Laurens further notes that the remedy forms a sort of emulsion with mucus, a sort of whitish magma which, previous to operation, should be removed with hydrophile cotton. No eschars resulted after application, though tumefaction sometimes remained for twenty-four hours. There was no sweating or disturbance of either the respiratory or circulatory systems.

The only other article on this special application of guaiacol which I have seen is one by Geronzi.* Finding, as did Laurens, that the oily solution of guaiacol made with mucus, a whitish magma, disagreeable alike to both patient and operator, it occurred to him to make a solution in alcohol. We know that alcohol at 90° produces a caustic action, and tissue retraction ensues both by the coagulation of the albumin of the tissues and the abstraction of water, and that at 25° it produces painful sensations. Alcohol alone constricts the vessels, produces a coldness and paleness of the parts, and consequently a slightly anæsthetic action. Under such circumstances it should not be stronger than fifty per cent. Geronzi finally settled on a solution composed of two grammes of guaiacol dissolved in fifteen grammes each of alcohol at 90° and distilled water. To destroy the disagreeable odor of the mixture he added a few drops of oil of bergamot or tincture of vanilla. As regards the relative advantages of the oily and alcoholic vehicles, the former allows the guaiacol to remain longer in contact with the tissues, but the latter has the greater diffusive power.

Geronzi's personal results were as follows: In four cases of nasal polyps and in five of cauterizations of the inferior turbinates, sufficient anæsthesia resulted in fifteen minutes to enable the necessary manipulations to be made without pain. No special features were noted. In the pharynx it was successfully used seven times for granulations. In two cases of nasopharyngeal polyps, in spite of frequent applications to the soft palate, it did not effect sufficient abolition of the reflexes to allow of the proper use of the rhinoscopic mirror.

In the ears the drum was punctured four times, granulations removed from its surface twice, polyps five times, and the malleus was removed three times. There was not always complete anæsthesia, but then this is not always the case with cocaine. Application also relieved various aural pains. This latter result was doubtless favored by the cooling and anæsthetic effect of the alcohol. In attacks of middle-ear trouble a certain disadvantage arose from the fact that the field became obscure. This was probably due to oxidation, which arose from contact of the guaiacol with the blood, an obscure color being thereby produced. Geronzi suggests that guaiacol prepared by synthetic crystallization would probably be more constant in action and less irritating. In general, he summarizes the disadvantages of guaiacol as compared with cocaine as follows:

1. It produces burning and formication.
2. It does not retract the tissues.
3. It requires a long time for action.

So far as I know, the two papers just alluded to comprise all that has been written upon this particular application of the remedy now considered. The fairly favorable reports concerning its use led me to give it a trial. At first a five-per-cent. solution in olive oil was made, and later a weaker solution in alcohol. The latter seemed to cause considerable smarting, though offering no better anæsthesia than the oily one, so after a few trials its use was abandoned. Guaiacol does not mix well with olive oil, even the purest. The latter must first be cleared of its albuminoids, resinoids, and coloring matters by zinc sulphate, and from its free fatty acids by absolute alcohol. Mr. A. P. Kerley, a skillful chemist of New York, kindly experimented on these points for me, and after a few trials devised the following formula: To a given weight of oil ten per cent. of dried sulphate of zinc (by weight) is added and the mixture heated over a water bath for an hour. It is then filtered, and then twelve and a half per cent. of absolute alcohol (by weight) introduced. It is shaken occasionally for a few days and then decanted. The result is a clear limpid fluid with which guaiacol mixes readily.

The oily spray applications, tampons, and injection by needle have all been employed. Quite to my surprise, I have not noticed in a single instance the formation of a whitish magma or emulsion mentioned by both the writers quoted. I have employed guaiacol as a local anæsthetic thirty-six times on twenty-eight different patients, sixteen men and twelve women, whose ages ranged from sixteen to fifty-five years. The conditions treated were as follows: In the nose, cold snare for polyps, 3; and for polypoid degeneration of the middle turbinate, 2; curetting of ethmoid cells, 4; removal of sæptal spurs and ridges by saw, 5; cauterization of the inferior turbinate, 2, and of the middle, 3.

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* *Arch. ital. di otol.*, iv, 1896, p. 323.

In the pharynx, large tonsils were cauterized eleven times, lingual tonsil once; granular pharyngitis curetted twice, and uvulotomy done once.

In the larynx the remedy was used only once—viz., for anæsthetizing the surface of a tuberculous ulcer to which a strong solution of lactic acid was to be applied.

Of the results, so far as anæsthesia was concerned, it was perfect in fourteen, partial in sixteen, very slight in two, and wanting in four. These results might have appeared in a better light if I had waited in many instances longer before beginning the operation. The course followed in this respect was to determine the time limitations of this remedy. In looking over the tabulated results, it is seen that of the four cases in which anæsthesia was wanting the time of application in two was only three and six minutes respectively. The same is true of the cases called "partial," most of them having had the remedy applied less than eleven minutes. It is distinctly stated by both Laurens and Geronzi that the action of guaiacol on mucous surfaces is much slower than that of cocaine, requiring from fifteen to twenty minutes for complete absorption. On the other hand, I have obtained complete anæsthesia in ten minutes.

In spite of the fact that guaiacol is said to have no power to contract the vessels, I have not noticed any more bleeding in cutting operations than with cocaine. With the remedy in aural practice I have had no experience. If, as Laurens and Geronzi assert, paracentesis of the drum membrane can be done without pain, it would appear that guaiacol is a remedy of very great value, for it is well known that at this particular anatomical site cocaine has but very little effect, as we have to do with a surface which is essentially cutaneous rather than mucous in structure.

From no point of view can it be maintained that guaiacol is superior to cocaine. I have made no such statement, but have sought to fairly record clinical results. Guaiacol requires for absorption a much longer time than does cocaine. In oily solution, at least, it is more difficult to prepare and less agreeable to handle. To some few people its odor is disagreeable.

In the cases thus far reported, numbering, with my own, ninety-eight in all, not the slightest constitutional effect (much less a dangerous one) has been noted. The anæsthetic effect is less certain than that of cocaine, but where, for any reason, the latter is inadmissible, guaiacol is in the majority of cases a reliable substitute.

118 West Sixty-ninth Street.

A New Book on Diseases of the Stomach.—Messrs. P. Blakiston, Son, & Co., of Philadelphia, announce that they expect to publish in October a work on this subject by Dr. John C. Hemmeter, of Baltimore.

SUBMUCOUS HÆMORRHAGE OF THE VOCAL CORDS.*

By S. W. LANGMAID, M. D.,
BOSTON.

The occurrence of five cases of submucous hæmorrhage in the vocal cords has seemed to me worthy of record, especially since these lesions had a definite cause and were so similar in appearance and situation, and because few like cases have been reported.

The situation of the extravasation was in every case at the junction of the anterior with the middle third of the cord. In only one case was the hæmorrhage diffused, but, with this exception, it consisted of a globule of blood underneath the delicate mucous membrane, whose diameter was nearly that of the transverse diameter of the cord.

This red disc was as well defined as is the globule of air in the mechanic's spirit level—in fact, that appearance and its *apparent* movement during phonation made the comparison inevitable. That the situation of the hæmorrhage in the exceptional case was the same as in the others was afterward shown by the small hæmatomatous tumor which remained after the extravasated blood had been absorbed.

In every case the cause of the hæmorrhage was vocal strain, long continued or sudden, where there had undoubtedly been a previous catarrhal condition. The occurrence in every case was marked by sudden vocal inability. All the patients were singers except one, and he was an actor. Two of the patients were males; their ages varied from twenty to sixty years, but most of them were under thirty-five years of age. The impairment of the voice consisted in hoarseness and, in singers, in limitation of register in the upper notes.

That the laryngeal catarrh was an important factor in this laming of the vocal apparatus I have no doubt, because the lack of tension seemed to exist equally in both cords, and not especially in the cord into which the hæmorrhage had occurred.

In four of the cases the hæmorrhage occurred in the right cord; in one it was in the left. In the latter the extravasation was smaller and it disappeared sooner. In every case the cure was perfect and the voice restored.

The cause of this lesion is, in my opinion, as follows: In consequence of a laming of the vocal muscles from a catarrhal chorditis much greater force is required than is natural to bring the glottis into sounding position. This results in congestion, even to the extent of rupture of a blood-vessel. The congestion certainly occurs in the catarrhal larynx when no rupture of a vessel results.

That bad vocal technics is not always a factor in this lesion is shown by the fact that it occurs to the most finished and effective singers. One of my patients is one of the greatest lyric actors, and has been for more than thirty years a most brilliant and accomplished singer.

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* Read before the American Laryngological Association at its nineteenth annual congress.

It can not be doubted that the misdirected vocal efforts of an untaught singer who possesses great physical ability would tend to produce the accident which has been described; nor that frequently repeated attempts to use a register or quality of tone foreign to the natural voice, as in the case of the actor to whom I shall refer, would result in some such lesion. The history of the following cases, however, would show that a pre-existing catarrhal condition is the factor which predisposes to the laryngeal apoplexy:

Case I.—Miss W., aged about twenty years, unusually robust and taller than most women. A pupil of the conservatory of music. Her instruction had not been such as would insure the best voice delivery. A slight laryngeal catarrh had existed for some weeks and had probably been perpetuated by unwise vocal practice, which seemed necessary in view of a public performance on the occasion of her graduation from the conservatory. After successfully singing at this performance, which was in a very large auditorium, she became instantly aphonic and had pain in the region of the larynx.

The examination which I made the following day revealed the condition which I have described—viz., a globule of blood in the right vocal band. The lack of tension of the vocal cords was very marked. Complete rest of the laryngeal voice, with the ordinary local applications for the catarrhal condition of the larynx, resulted in complete restoration of the voice. The extravasation disappeared in a few days.

Case II.—A leading young actor, who was performing every night in a play which required the use of two qualities of voice. To represent a double personality he was obliged to make use of a cramped position of the neck, and at the same time to speak in an acquired, unnatural low quality of voice. The result was hæmorrhage into the right cord, which assumed the globular form which has been described.

Another play was substituted for the one that had produced the accident, and the effusion was quickly absorbed. In this case there was a marked laryngeal catarrh of recent origin which had caused some hoarseness.

Case III.—A world-renowned barytone and actor, at the close of a long engagement during an especially inclement winter, was found to have the same submucous, globular hæmorrhage into the right cord. Slight hoarseness had been previously complained of, but the patient was such a consummate actor and singer that he was able to almost conceal a defect of voice which would have disabled a less experienced artist.

The extravasated blood was quickly absorbed—in fact, it had almost completely disappeared after seventy-two hours.

Case IV.—Miss A., teacher of vocal music in the public schools. She said that the voice had gradually become somewhat hoarse and that she had to use great efforts to continue her work. Her general strength was so great, however, that she persisted in performing her duties, until suddenly she became aphonic and suffered from laryngeal pain.

When I saw her, after five weeks or more, the voice was quite hoarse but had regained some vocal quality. The right cord was uniformly red from extravasation of blood under the mucous membrane. There was also laryngeal catarrh.

The patient was made to use a slate for all communications for some days. Then whispering was allowed, and as the extravasation was seen to disappear the natural speaking voice was resumed.

After a month nothing remained of the hæmorrhage except a minute dusky red granule on the edge of the cord, at about the junction of the anterior with the middle third. This was swept off by forceps, and in a few days the speaking voice was perfect. Singing was gradually resumed, and the patient performed her regular duties as a singing teacher and leading soprano in a church choir.

Case V.—Miss N., a chorus singer in an English opera company. Health and strength unusually good. In addition to singing in the chorus during eight performances each week she was ambitious to assume leading parts, and was therefore constantly studying to acquire leading rôles, for which it should be said she had the ability.

Such extravagant use of the voice had produced a laryngeal catarrh and some loss of tension of the cords, the effect of which was to render the attack and continuation of the tone difficult unless unusual effort was made.

The opportunity to assume the difficult rôle of Ortrude was suddenly afforded her and, against my judgment, was undertaken. The performance was in every way creditable, but almost complete aphonia resulted. The next day examination showed a globular extravasation into the left cord which, as she continued to use the voice, became slightly diffuse. After three days absorption was complete, and after some weeks the voice became quite normal.

It will be noticed that in none of my cases was there hæmoptysis. In similar lesions recorded by others more or less hæmoptysis was the rule, and in a few of these cases the extravasation was recurrent. In none of them has the peculiar globular extravasation been described.

The case related by Dr. Dundas Grant has some points of similarity to mine. His patient was a young lady, twenty-four years old, who experienced sudden hoarseness and loss of voice. In the left cord there was a submucous extravasation involving its whole extent. Ten months later there was a return of the same appearances, "except that the redness stopped short at the vocal process posteriorly and the prominence was most marked at the junction of the anterior with the middle third of the cord." A vascular tumor of the size of a hempseed existed near this point, attached to the upper surface and edge of the cord. The cause in this case was a fit of sneezing or some vocal effort.

In view of the fact that a similar tumor was left in one of my cases after the subsidence of the extravasation would seem to indicate that hæmatomata of the cord may always have their origin in such extravasations.

In none of my cases were both cords affected, although this is rather the rule than the exception in observations by others.

Laryngeal pain was frequently complained of.

With regard to prognosis, it may be said that all cases recover, and very quickly, the only exceptions being those where a vascular tumor remains, which must be removed before the voice can be restored.

The treatment should consist, first of all, in *absolute* rest of the voice when this is possible.

The laryngeal catarrh will be removed by such rest and by the local use of astringents. I have thought that application of menthol by means of a spray has been efficacious.

To help in the restoration of the vocal tension, strychnine and, after the complete disappearance of the extravasated blood, intralaryngeal galvanization may be beneficial.

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HYSTERICAL DYSPHAGIA.[*]

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My excuse for bringing before this meeting a subject which has nothing new is simply a plea that it should receive the attention among other neuroses of the throat to which its frequency entitles it. Hysterical aphonia is regarded as an entity, and is recognized or suspected by every practising physician because its possible existence is common knowledge and the diagnosis is comparatively simple. But with hysterical dysphagia there is no such distinct type, it is not so easy to rule out other possible causes, nor to follow accurately the perversion of function in the mechanism of swallowing.

The occurrence of functional dysphagia was described as early as 1733 by Hoffman. With the growth of medical literature the number of cases reported in which pronounced dysphagia was evidently not dependent upon organic disease increased until they were no longer thought worthy of record unless showing some peculiarity of symptoms, age, or sex. Most of these cases are described under the head of œsophageal spasm or œsophagismus, and are often called hysterical in the absence of other apparent cause.

The subject of œsophageal spasm appears in medical text-books since the time of Hoffman, and especially since the researches of Mondière[*] in 1833. Bamberger[†] describes it as a spasm occurring more frequently in the upper part of the œsophagus with simultaneous spasm of the constrictor pharyngii, not infrequently in the neighborhood of the cardiac end, and sometimes in any part of the gullet; it may travel upward, as in globus hystericus, with the sensation of an ascending ball. It may come on spontaneously, or only with attempts at swallowing. If high up and in the pharynx there is complete dysphagia; if lower down, regurgitation. He doubts if there is ever a complete idiopathic cramp. It may be due to disease of the brain or pneumogastric nerve, or be a reflex disturbance from the uterus, stomach, heart, respiratory organs, or disease of the œsophagus itself. It may occur with emotional disturbance, seasickness, or hysteria; from poisoning by belladonna or other drugs, and it is a pronounced symptom of hydrophobia. Sir Morell Mackenzie[‡] quotes several reported cases, many of them hysterical. He believes that a gouty condition of the blood is the most common source of reflex disturbance of the gullet, excepting foreign bodies. Pepper[#] says that œsophagismus is often associated with other evidences of neurosis, but sometimes constitutes the sole manifestation. It can sometimes be traced to a fear of strangulation induced, primarily, by some accidental impediment to deglutition, or the entrance of some foreign body. Fitz[‖] notes that there may be pain—either dull, a sense of constriction, or burning and darting—or there may be no pain at all. Osgood[△] reports a series of cases which he calls a peculiar form of œsophagismus, in which sudden attacks of distress—apparently arising from the lower end of the œsophagus, with pain radiating along the œsophagus, sometimes through the pharynx, into the ears—came on without apparent cause. Hyperæsthesia of the mucous membrane of the œsophagus is mentioned as a possible cause of œsophagismus by Rosenheim[◊] and others. Hyperæsthesia of the pharynx is often associated with it. The lingual tonsil is sometimes thought to be responsible for many of these cases. Operating upon it will sometimes remove the symptoms, but so also do many other suggestive manipulations.

Although many cases of œsophagismus are hysterical, and most cases of hysterical dysphagia exhibit a true spasm of the œsophagus, we must not consider these conditions identical. Œsophagismus may be the only symptom in the beginning of a cancer of the cardiac extremity, or be due to reflex from some other unsuspected disease, especially in the domain of the vagus, spinal accessory, and glossopharyngeal nerves. Some of these reflexes may be more or less hysterical, but we must be careful not to diagnosticate hysteria too quickly when we find œsophageal spasm. And, on the other hand, dysphagia may be purely hysterical without any spasmodic contraction. This is the case in hysterical paralysis of the œsophagus, in which the constrictor of the pharynx sometimes joins. In these cases solid food may be more easily swallowed than liquids; and pieces of food may become lodged in the gullet. There is no pain in swallowing, and a sound passes very readily.

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[*] Read before the American Laryngological Association at its nineteenth annual congress.

[*] *Arch. gén. de méd.*, April, 1833.

[†] Virchow's *Pathol. und Therap.*, Bd. vi, p. 94.

[‡] *Diseases of the Throat and Nose*, vol. ii, p. 207.

[#] *System of Medicine*, vol. ii, p. 419.

[‖] *Twentieth Century Practice of Medicine*, vol. viii, p. 110.

[△] *Boston Medical and Surgical Journal*, April 25, 1889.

[◊] *Allg. med. Central.-Ztg.*, 1895, lxiv, 1173.

In the records for the hospital out-patient clinic for diseases of the nose and throat in my service I find a diagnosis of functional difficulty in swallowing in about one in every five hundred cases, or about one fifth of one per cent. I shall not report my cases in detail, as the clinical picture is a familiar one.

Briefly, functional dysphagia occurs more frequently in women than in men, but it is not uncommon in the latter, and may appear in children.* It is sometimes met with in pregnancy without other cause, and may be induced by emotional strain or by reflex irritation from some other part of the body. There may be pain, or a sense of constriction, or a feeling of a foreign body in the gullet often at about the cricoid cartilage, or even higher. The condition may be associated with globus hystericus or other evidence of hysteria, or the dysphagia may be the only symptom. Where there is evident spasm of the gullet, this comes on in advance of the act of swallowing.

The onset is generally sudden, not infrequently dating from a temporary lodgment of a foreign body, an acute pharyngitis, or amygdalitis. Liquids can generally be swallowed with much less difficulty than solid food, and the amount of difficulty varies more or less at different times of the day, or from day to day. There is often loss of flesh and weakness from lack of food. There may be regurgitation from the œsophagus, but this is rare. In many cases the trouble seems to be pharyngeal rather than œsophageal. The symptoms may have persisted, generally with more or less intermission, for months or even years; or after entire relief may recur, following a recurrence of an acute pharyngitis or other exciting cause.

An œsophageal sound may pass without obstruction, or there may be temporary obstruction from local spasm in the œsophagus. This latter symptom I have not observed as frequently as many of our text-books would lead us to expect. Auscultation of the œsophagus is generally negative.

For diagnosis the laryngoscope is a great aid in ruling out sufficient cause for the dysphagia in its field of vision. The aspect of the patient, a sudden onset of the complaint, temporary abatement, obstruction to the first act of swallowing, and the free passage of bougies, help to make it probable that there is no more serious disease; but it must be borne in mind that the dysphagia may be reflex from something unsuspected.

As in many similar neuroses, suggestive treatment, doing something active, convincing the patient that there is nothing wrong, will, in most cases, be sufficient. Passing bougies as often as possible is the simplest and most effective agent. The treatment of any trouble in the pharynx or neighboring regions is important, not only for the time being, but to prevent recurrence. Electricity with an œsophageal sound is to be avoided, as cases of syncope, and even of death, have occurred from cardiac irritation through the vagus.

Some patients recover immediately, others only after prolonged treatment directed to the general nervous system. An instance of immediate cure, reported as early as 1707, by Van Helmont, is quoted by Mackenzie. A woman had hardly swallowed anything for three months. Van Helmont adds: "I came, recognized the disease, and immediately the Lord cured her." There is a modesty about this that we seldom find in our more modern clinical reports.

It has been suggested that the dysphagia may sometimes be due to a reversed peristalsis. Also that the circular contraction which normally takes place just behind the bolus of food on its passage downward may, by an error of reflex, occur just in front of it.* This would have to be classed as a faulty mechanism rather than as a true spasm.

Difficulty or pain in swallowing, due to some transitory inflammation in the pharynx, or foreign body at the cricoid, may leave a mental impression which persists long after the cause has subsided, in the same way that hysterical aphonia may follow acute laryngitis; or some local tenderness, insignificant in itself, may be magnified into a belief in some mechanical obstruction or fear of arousing intense pain. In these cases it is the first act of deglutition which is wanting, the seizing of the bolus of food by the pharyngeal muscles. Fluids which trickle into the lower pharynx are swallowed by the normal reflexes, although sometimes only with a protest, as it were, on the part of the patient. Inability to swallow is well known as appearing in hypochondriacs, and especially when the patient has a delusion that he has hydrophobia. There is often a true œsophagismus aroused by these attempts to swallow, but where we have no evidence of this I see no reason for taking it for granted that it exists. Spasm is accompanied by transitory pain or a sense of constriction, subsiding as the contraction subsides. If sufficiently frequent and strong to prevent swallowing, it can generally be detected by a bougie.

Hysterical dysphagia should be described as an inability to swallow, or difficulty in swallowing without cause other than hysteria, or by reflex from some irritation so trivial that the reflex must be considered hysterical. There is often local spasm, there may be local paralysis, in the œsophagus or in the pharynx, or both. It seems to me that in other cases we must look upon it as an hysterical refusal to swallow; not that the patient is to blame or can avoid it, but that there exists no muscular action which can not be imitated by voluntary nervous control.

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* Haushalter. *Med. mod.*, 1891, ii, 176.

* Smith. *Virginia Medical Monthly*, 1877, p. 743.

THE
PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

(*Continued from page 215.*)

Part VI.

Having treated the subject-matter at hand, as well as I was able, from the concrete, I would like to present it briefly from the abstract; to give expression to my general impressions, and to allow myself a little latitude in criticising the work of men who have for years devoted themselves to their special branch. Nobody can appreciate more than I do that in so doing I lay myself open to the charge of presumptuousness. My only apology shall be that I am in search of the fundamental truths which underlie our science, and that to arrive at these truths I am ready to expose myself to this charge. The more I saw of gynæcology, both at home and abroad, the more I became convinced that it was passing through a transitional stage. It is one of the youngest offsprings of the mother surgery; in fact, it can hardly be called more than a generation old. And what strides it has been making during this generation! And it is, we believe, due to the enormous strides that have been made during such a short space of time that it now finds itself in a transitional stage. Almost every year saw a distinct step forward made, due to the enthusiastic efforts of German, French, American, and English operators. What wonder, then, that the rank and file of the profession did not have time to digest a new discovery before it was already followed by another! As a result of all this, we see to-day the fierce light of clinical experience thrown on the many new operative procedures that have of late years been introduced. And already some of these new procedures have been relegated to the rear by the very men who introduced them, or at least enthusiastically accepted and practised them. True, some of them are standing the test of time, and doubtless will ultimately be accepted. But, again, the many new and modified procedures that are continually being brought forward to cure certain pathological conditions—*e. g.*, retroversion of the uterus—show only too conclusively that we are not yet satisfied with the results of any method. But surely all attempts to arrive at a satisfactory conclusion can not be too highly commended. Only a few years ago our general surgeons were testing numerous methods for the radical cure of inguinal hernia; and we could daily see a Kocher, a Macewen, or a McBurney operation performed for the relief of this condition. Then came "the pride of Padua," as Bassini is affectionately called by his fellow-townsmen, and all the other operations were relegated to the rear. So we may hope that in the near future all the moot questions in gynæcology will be settled. Let us see what some of these moot questions are.

Surely the teachings of Lister, Pasteur, and Koch are no longer debatable. And yet how differently are the principles of asepsis and antisepsis, now universally acknowledged, put into practice! Asepsis is in the ascendency, and is certainly the ideal, but by many believed to be impracticable. The older chemical agents are gradually being abandoned. Carbolic acid is daily losing ground; iodoform and mercury must soon follow it. In place of these, so far as possible, the principle of asepsis is coming into play; witness the use of plain sterile gauze, certainly a much safer agent in more ways than one, in place of gauze impregnated with iodoform. In place of carbolic acid, sterilized water is being used for instruments, or, better yet, they are being used dry. The poisonous corrosive sublimate is being replaced by the equally potent germicide formalin, which has the advantages of being, so far as we know, innocuous to the human system. In some clinics—*e. g.*, Jacobs's—we find neither carbolic acid nor corrosive sublimate nor iodoform in use. With the exception, perhaps, of Lawson Tait, gynæcologists abroad are unanimous in accepting the germ theory. But how differently they apply it! The German school, as well as the Italian, is most thorough and conscientious in attending to the smallest link of the aseptic chain. Martin, of Berlin, and the French school in their vaginal work, at least, and the London school in all their work, fail to carry out so rigorously the minute details of asepsis. And we must conclude that they depend, to a certain extent, on the element of chance to obtain their good results. True it is that if we boil our instruments and sterilize our gauze and wash our hands before an operation we can touch some unsterilized object, as the chair we are sitting on, or the operating table, and yet go on with our operation and save most of our patients. But at some time that chair or that operating table will contain pyogenic germs and we shall introduce these germs into the tissues of our patient, and thereby invite new disease, or perhaps death. We should, I take it, either accept or reject the germ theory. If we accept it, we should devote all our energies to systematically carry out its demands to the smallest minutiæ.

To look at the subject of asepsis from another standpoint. Some operators are much more careful in their aseptic precautions when operating through the abdomen than in their vaginal operations, even though the peritonæum be opened from below. There does seem to be greater immunity from infection in the latter class of operations. Tolerant as is the general peritonæum, the pelvic peritonæum seems to be more tolerant even than other parts of it. Whether the comparative rarity of septic peritonitis following operations on the pelvic organs performed through the vagina is due to this supposed fact or not, is, of course, impossible to say. But certain it does seem that, other things being equal, there is much less danger of infection following vaginal than following abdominal operations on the pelvic organs, even though at the conclusion of the operation the vagina be shut off completely from the peritoneal cavity. I know of no other way to account for the surprisingly good results following vaginal operations at the hands of operators who are, to say the least, not very careful in their aseptic precautions.

Trendelenburg's position has for fifteen years proved itself an invaluable aid in the performance of operations on the pelvic organs. It is employed daily by a large number of excellent operators the world over. And yet it is systematically discarded by a few men whose names are familiar wherever gynæcology is practised. It is a curious fact, difficult to account for. Fortunately, the example of these few men has not been followed to any extent.

The question of drainage must be answered in three parts:

1. Should drainage ever be employed in abdominal or vaginal operations?
2. When should drainage be employed?
3. What should be used as drainage material?

These questions are, to my mind, among the most important that can be raised. Many a week, many a month of suffering, now and then a human life hangs in the balance. The opinions of all able and experienced men must be respected, but, unfortunately, they are so much at variance that we must analyze them carefully to arrive at the correct conclusion. Only a few years ago all cases were drained. To-day no man drains in all cases, most men drain in few cases, and a few men drain in no cases. We are each year coming nearer and nearer to ideal asepsis, and the nearer we come to it the less need will we have of drainage. Nobody will deny that a woman is much better off if, at the conclusion of an operation, we bring the healthy tissues left into as near as possible normal relations, provided, of course, we can do so with safety. As regards safety, we are beginning, I believe, to look upon it from a different standpoint. Formerly we thought it safer to drain in most cases; now there are many men whose mortality is lower since they drain few or no cases than it was formerly where they drained in most or in all cases. Let us see if we can understand the "rationale" of this. Some may say that these operators have now more skill than formerly, and hence the lower mortality. But a little less technical skill does not give rise to septic peritonitis. We must not lose sight of the fact that if we drain we knowingly introduce into the peritoneal cavity a foreign body which we leave there for forty-eight hours. Who will say that his gauze, especially if after having been taken from the sterilizer it be impregnated with some chemical and hung up for several hours in a room, is sterile? If we consider the many ways in which such gauze can become contaminated from the time it leaves the sterilizer until it is placed in the peritoneal cavity, we must admit that it takes a bold surgeon to make use of this procedure. The symptoms arising from iodoform poisoning and from septic peritonitis are in some respects similar, and the differential diagnosis may be difficult, especially where there is suppression of urine. I know of two cases where I am morally sure that death was due to packing the pelvic cavity with iodoform gauze for drainage. Whether the deaths were due to iodoform or to sepsis I am not willing to say. Jacobs told me of a similar case which he lost, in which iodine was found in the urine. If, in place of iodoform gauze, the gauze is taken directly from the sterilizer and introduced into the abdominal cavity the dangers of introducing sepsis are considerably diminished. But are we even then safe? Who can assert that his gauze, although it has been in the sterilizer the proper length of time, and presumably contains no living bacteria, is free from spores? And these spores, left in the peritoneal cavity for twenty-four or forty-eight hours, may develop into most beautiful specimens of living virulent germs. The question will come up in every case whether we are exposing the patient to greater risks by draining than by not draining. The tendency at the present time is to draw the line closer and closer about the class of cases that need to be drained. And who will drain where there is no need of it? Already some operators assert that the general mortality is lowered if drainage is *never* used, and they have the courage of their convictions.

I have always been very much interested in the treatment of retroversion of the uterus. Before I left for Europe American gynæcologists chiefly performed ventrofixation or Alexander's operation for the cure of this condition. Abroad Alexander's operation is rarely practised, and ventrofixation is being given up by men who formerly performed it in many cases. Vaginofixation is likewise being given up by the very men who introduced it. The objection to ventrofixation is that it exposes the patient to the dangers of subsequent intestinal obstruction and death. Such cases as I saw in Brussels, and similar ones that I heard reported by various operators, are beginning to draw attention to the dangers attending this operation. Surely so harmless a disease as retroversion of the uterus should not demand so heroic a treatment. Vaginofixation is in many cases open to a similar objection. In performing it on any woman not yet past the childbearing period, we expose her and her unborn child to the dangers of a Cæsarean section. Are we justified in doing this? In women past the menopause the operation would be more applicable; but it is not this class of women, as a rule, who come to the gynæcologist for the relief of retroversion of the uterus. There are two operative procedures, both performed from the vagina, which struck me as being applicable in most cases of retroversion that require operative treatment—and there certainly are some cases that do not—and free from the objections of the other methods. Both operations are practised chiefly by the French school. The simpler one consists in opening Douglas's *cul-de-sac* through a side-to-side incision of the posterior vaginal wall, breaking down the adhesions that immobilize the uterus, bringing the organ forward, and keeping it there with a large drainage-tube fastened by a suture to the posterior vaginal wall. This tube is left in place two to three weeks. It is then removed, the slight adhesions that have formed are broken down by massage, and the retroversion has been cured by a simple and not dangerous operation. The other method consists in opening the posterior *cul-de-sac*, as in the previous case, and freeing the uterus by breaking down the adhesions. The incision in the posterior vaginal wall is then closed. The anterior vaginal wall is then incised from side to side, the peritonæum opened, and with two or three sutures the anterior wall of the uterus sewed to the peritonæum covering the anterior wall of the vagina. Then the incision in the anterior vaginal wall is closed. Such cases have been observed to go through a normal labor, and the uterus remained forward.

But the question which of late years has most agitated gynæcological circles, and which is destined in the near future to play an even more prominent part, is, What class of cases can be advantageously operated upon from the vagina? I arrived in Europe with the firm conviction that the vaginal route was too often employed by the French school and its followers; that it was dangerous to attempt to remove pus tubes in this way; that a clamp should only be used in the face of active hæmorrhage, and that to attack any but the smallest fibroid tumors through the vagina was contraindicated. Perhaps these views may have been justified when we consider that nowhere else has abdominal surgery been brought to such a stage of perfection as in America, and in no city of America more than in New York. The firm convictions with which I left soon gave way to doubt, and doubt was soon superseded by convictions, but of a different kind. And I have returned convinced that the vaginal route will steadily gain in popularity and reduce the mortality without reducing the number of cures. From several of the cases above detailed an idea can be obtained of the scope of vaginal operations. The objection has been raised that when we operate *per vaginam* we can not see what we are doing, and hence it would be better to operate through the abdomen. Carrying out this analogy, it would be better to do a Cæsarean section than to deliver with the high forceps. But is it true that we can not see the pelvic organs and their relations in operating through the vagina? In unilateral tubal or ovarian disease, where we incise the anterior or posterior *cul-de-sac*, it is true we do not get a good view of the whole pelvic contents. But who would expose a woman to the dangers and disagreeable after-effects of an abdominal operation if, with a little more care and trouble, the same result can be attained from a vaginal one? But in bilateral disease where the uterus is first removed, especially if clamps are employed for this purpose and are applied from the cervix diagonally upward and outward, a large hollow cone is left after the removal of the uterus. The apex of this cone is at the upper end of the vagina, and the base high up in the pelvic cavity. Now the appendages are freed, adherent gut or omentum released under guidance of the eye, and the tubes and ovaries are clamped off. The objections to leaving the clamps in place are real, and have been enumerated above. It is indeed surprising how readily, after the pelvic organs have been removed, each clamp can be replaced by a ligature. I think it must be admitted that the use of the clamps in this way is a decided advantage. I have seen some cases of operation by this method where the primary application of ligatures would have been exceedingly difficult if not impossible. Then, again, there is less danger from the slipping of a ligature if the tissues have first been in the grasp of a clamp, for we all know that if a ligature be applied ever so carefully in œdematous tissue it is liable to slip. If, however, a clamp has for several minutes been compressing such tissue the œdema is gone, and a ligature now applied will not slip. Another technical point of great importance in the removal of fibroid tumors from below is the splitting of the anterior uterine wall, or even of the whole uterus, into two lateral halves. In this way pieces of the uterus with its tumor can be cut away, and thus the size of the uterus reduced until it can be drawn forward into the vagina; and the clamping off of the lateral halves can be more readily accomplished than if the uterus were left intact. Naturally it is safer to cauterize the uterine mucous membrane, since it comes in contact with the peritonæum during the manipulations. But this step does not seem to be of great importance, as it is ignored by the whole French school.

On these lines I firmly believe the advances in gynæcology will be made. There will always be conditions that necessitate an abdominal operation, but their number will steadily decrease. More care will be required in diagnosis, in determining the relation of the diseased organs to their surroundings, before taking the knife in hand. Naturally, even with the greatest care and attention, errors in diagnosis will occur, and occasionally we shall attempt to operate through a vaginal incision and find ourselves forced to open the abdomen. But what will this prove? Only the truth of the old saying: *Errare humanum est!*

65 West Eighty-fifth Street.

A CLINICAL STUDY OF SEVEN HUNDRED AND ONE CASES OF

NASO-PHARYNGEAL ADENOIDS,

OBSERVED IN TWO THOUSAND DISPENSARY PATIENTS.

By H. ARROWSMITH, M. D.,
BROOKLYN.

The material from which the following tables have been compiled has been seen by the writer in the clinic of Dr. Jonathan Wright in the Brooklyn Eye and Ear Hospital.

Having for some time been impressed with the fact that among the patients presenting themselves to us for treatment were a very large number whose trouble seemed to be located in the so-called "lymphoid ring," I determined to tabulate these cases in a way which might be of interest if not of practical value.

The recent publication of Brindel, of Bordeaux (*Revue hebdom. de laryngol.*, etc., Nos. 15 and 16, 1897), of the statistics of Moure's clinic, in that city, furnished an extra incentive to complete the tabulation for purposes of comparison.

The general run of patients presenting themselves at the Brooklyn Eye and Ear Hospital is probably much the same as in other free clinics as regards both the social and physical condition of the patients themselves and the kind of disease from which they are suffering; so that these observations may apply to most of the throat and nose clinics in this part of the country.

I have taken, for purposes of analysis, the first two thousand patients who have attended since this clinic was established in November, 1894. This number is sufficiently large to give us a fairly accurate conception of the frequency of these particular lesions in the class of our population to which these people belong.

That disorders of the tonsils—faucial, pharyngeal, and lingual—have a very important place in the pathology of the upper respiratory tract is at once apparent from the fact that in our 2,000 patients, 858, or 42.9 per cent., were the subjects of disease of these organs, and thereby induced to seek relief from the symptoms for which they were in all cases partially and in many instances wholly responsible.

No note has been made in this series of any condition except chronic hyperplasia of these structures.

A study of the accompanying table will show that enlargement of these tissues is somewhat more common in the female sex. In hypertrophy of the lymphoid material at the base of the tongue the females show a very decided preponderance over the males. Up to the fifteenth year the males suffering from adenoids are slightly more numerous than the females (283 to 209); after this period, however, the proportions are directly reversed, and continue so. In hypertrophy of the tonsils alone the proportions up to the fifteenth year are practically the same; afterward the number of females is more than double that of males.

Table I.—*Relative Frequency, according to Age and Sex, of Adenoids, Adenoids and Tonsils, and Tonsils.*

Age.	Adenoids.			Adenoids and Tonsils.			Total.			Tonsils.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1	2	..	2	..	..	..	2	..	2	..	..	..
1	5	2	7	1	..	1	6	2	8	..	..	..
2	5	6	11	5	..	5	10	6	16	..	2	2
3	10	9	19	12	10	22	22	19	41	1	1	2
4	18	17	35	19	13	32	37	30	67	3	1	4
5	9	14	23	21	14	35	30	28	58	2	3	5
6	13	16	29	10	14	24	23	30	53	4	2	6
7	12	10	22	14	14	28	26	24	50	5	2	7
8	20	18	38	10	11	21	30	29	59	..	2	2
9	10	15	25	6	11	17	16	26	42	1	2	3
10	10	8	18	13	16	29	23	24	47	1	5	6
11	6	11	17	9	4	13	15	15	30	3	3	6
12	11	6	17	12	9	21	23	15	38	2	..	2
13	9	9	18	10	8	18	19	17	36	2	3	5
14	9	7	16	7	7	14	16	14	30	..	2	2
15	9	5	14	2	9	11	11	14	25	1	1	2
16	2	11	13	5	5	10	7	16	23	2	2	4
17	1	4	5	2	..	2	3	4	7	1	3	4
18	5	5	10	1	3	4	6	8	14	2	1	3
19	5	1	6	1	..	1	6	1	7	..	4	4
20	1	2	3	..	4	4	1	6	7	..	2	2
20–25	3	10	13	4	8	12	7	18	25	3	7	10
25–30	2	3	5	2	4	6	4	7	11	2	6	8
30–35	..	..	..	..	2	2	..	2	2	..	5	5
35–40	1	1	2	..	..	..	1	1	2	1	3	4
Over 40	..	..	..	..	1	1	..	1	1	2	1	3
	178	190	368	166	167	333	344	357	701	38	63	101
	(18·4 per c't.)			(16·6 per c't.)			(35·05 per c't.)			(5·05 p. c.)		

In this connection it is only fair to state that of the 2,000 patients 1,123 were females and 877 males. Whether this implies that after a certain period women are more prone to these affections than men, or whether by reason of the nature of their employment it is more difficult for men to attend during the usual clinic hours, it is, of course, impossible to state.

In the two thousand observations we find the following percentages:

Of adenoids alone	18·4
Of adenoids and tonsils	16·65
	35·05
Of tonsils alone	5·05
Of hypertrophy of the lingual glands	2·8
	42·9

It is a fair statement that aside from the acute disease due to "taking cold" or to infection or traumatism, practically all the patients under the age of puberty suffered from chronic disease of these lymphoid structures.

Of the symptoms caused by adenoids, for relief of which the patients came, by far the most frequent was difficulty in nasal respiration, which was noted 586 times. Next in frequency were symptoms referred to the ear, 243 times; and more rarely complaints were made of epistaxis, eczema of the nostrils, cough and hoarseness, headache, spasmodic croup, asthma, cervical adenitis, "snuffles," choreiform and epileptoid attacks, convulsions, and various disorders of speech.

TABLE II.—*Hypertrophy of the Lingual Tonsil.*

AGE.	Males.	Females.	Total.
12	..	1	1
14	..	1	1
15	..	1	1
16	..	1	1
19	1	1	2
20	..	2	2
21	..	2	2
22	..	4	4
23	..	2	2
24	1	3	4
25	1	2	3
27	..	3	3
28	..	3	3
29	1	3	4
30	..	1	1
31	..	1	1
32	..	1	1
33	..	1	1
35	..	1	1
36	..	3	3
38	..	2	2
40	..	2	2
41	..	1	1
43	1	1	2
44	..	1	1
45	..	2	2
47	..	1	1
50	..	2	2
53	1	..	1
55	..	1	1
	6 (2·8 per cent.)	50	56

In the cases of lingual hypertrophy the most common symptoms were a sensation of dryness in the throat with irritable cough, or the sensation of a foreign body, dysphonia, aphonia, dysphagia, dyspnœa, and loss of acuteness of taste. In nine instances concomitant hypertrophy of the faucial and pharyngeal tonsils was noted—two males, seven females. Above the age of twenty-five years the faucial tonsils were enlarged in five cases, and they, as well as the pharyngeal, in one patient forty-three years old. All these patients were females.

TABLE III.—*Record, by Months, of the Adenoid Cases.*

	1894.	1895.	1896.	1897.	Average.
January	..	13	21	23	19
February	..	16	26	37	26⅓
March	..	42	33	39	38
April	..	19	22	34	25
May	..	16	34	11	25
June	..	12	20	..	16⅔
July	..	21	21	..	21
August	..	22	17	..	19½
September	..	14	34	..	24
October	..	22	20	..	21
November	11	19	24	..	18
December	12	21	25	..	19⅓
	23	237	297	144	

The difference in the number of patients presenting themselves at various seasons is not as striking as one would expect, though the months of February, March, and April give the greatest numbers.

In mature life the tonsils seem to be encountered more frequently than adenoids, and this is easily explained by the much larger amount of the fibrous tissue framework in the faucial than the pharyngeal tonsils, fibrous tissue retrogressing, of course, much more slowly than the lymphoid cells, which make up the greater part of adenoid hypertrophies.

All the patients were examined by posterior rhinoscopy, when the procedure was possible. In children so young or so unmanageable as to render this impracticable, digital exploration was resorted to.

TABLE IV.

Adenoid operations, under general anæsthesia	204
Adenoid operations, under local anæsthesia (or without)	51
	255
Amygdalotomies, single and double	208

Of the 255 operations, 204 were done under general anæsthesia, ether being always employed to a point just short of abolishing the cough reflex. We are perfectly satisfied of the advantages of general anæsthesia, particularly in young subjects, in the way of lessening nervous shock; it also saves time, and, above all else, enables the operator to do his work with much greater thoroughness than when the operation is done without its aid. No bad after-effects have been observed from its use, and the little patients are much more willing to undergo subsequent manipulations, if they are necessary, than when removal of these growths has been done while they were conscious.

Of the fifty-one patients operated on with cocaine, or without, the majority were larger children or adults. In a few instances, in young children, where the hypertrophies were small, they were scraped off with the finger nail at the time of making the diagnosis.

No preparatory treatment has been resorted to, and no douches permitted for some time after the operation. In a few instances there may have been an exacerbation of an already existing otitis, but in no case has an operation been followed by any trouble of this kind where the ears have previously been sound.

As to our ultimate results I do not feel inclined to venture any definite statement. It is probable that in the majority of cases the symptoms have been relieved, as we rarely see the patients more than once or twice after the operation, and sometimes not at all. It may be that they seek advice elsewhere. It is also impossible to speak positively in regard to recurrence. These patients are notoriously hard to follow up, and with us any conclusions we may have reached are largely presumptive, and therefore scientifically valueless.

Contrary to the experience of many Continental observers, in not a single one of the 701 cases here enumerated has there been the slightest indication of a tuberculous tendency in these structures discoverable on gross examination; and examinations—histological, bacteriological, and by inoculations—in twelve consecutive unselected cases, have also been absolutely negative.

32 SCHERMERHORN STREET.

ON THE DIAGNOSIS AND TREATMENT OF ABSCESS OF THE LUNG.

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While the surgical principle "*Ubi pus, ibi evacua!*" is nowadays followed more than ever before as regards even those parts of the human body that are accessible only under great difficulties, there seems to be some exception in regard to pus accumulations in the lungs, although they are by no means of rare occurrence. This hesitation in attacking lung abscesses with the surgical knife is apparently caused by the widespread prejudice that they are all of a tuberculous character and could consequently not be cured by simple evacuation. But while there is no doubt that the presence of one tubercular abscess presupposes the affection of a more or less extensive area of lung tissue, the nature of which would certainly be but little influenced by opening a single abscess, still there are many abscesses of a less formidable character which are caused by preceding inflammatory processes, by suppurative bronchitis, bronchiectasis, etc. These being of a non-tuberculous character, they are curable, if treated after true surgical principles. If this fact were fully realized, the medicamentous armamentarium of euthanasia would be given up in many cases of alleged phthisis. Here, in the difficulty of the diagnosis, is the critical point. Still, the diagnosis of lung abscess is much easier than its localization.

The presence of copious purulent expectoration, its admixture of elastic fibres and blood pigment, the history of a preceding inflammatory process, particularly of pneumonia, which has run no typical course, the physical signs of the presence of a cavity, the absence of tuberculous manifestations, etc., should point to the existence of a lung abscess. As to localization, it has to be borne in mind that while the cavities in the apex contain more or less air, those situated farther below contain purulent secretion only. If in the latter variety expectoration is copious, so that the cavity becomes evacuated, the respiratory sounds become tympanitic on percussion, and are well perceptible on auscultation. If, on the contrary, the cavity is filled up, there is complete dullness, and the respiratory sounds are hardly if at all audible, pectoral fremitus also being absent. Cavities of recent origin are easier localized than old cases, not only because the course of the precursory disease furnishes some elucidation, but also because the physical symptoms are much more clearly pronounced. Old cavities are, with few exceptions, deeply situated, and can generally be reached below the lower angle of the scapula.

Exploratory puncture, while quite reliable in pyothorax, often fails to disclose lung abscess, and has therefore to be replaced by exploratory pleurotomy or pneumotomy. (Compare the writer's article on Exploratory Pleurotomy and Resection of Costal Pleura, *New York Medical Journal*, June 15, 1895.)

The treatment is governed by the same principles as those which determine in any case of abscess—that is, *thorough evacuation and drainage.* This can be well done only by making a wide opening in the chest wall. To accomplish this the resection of at least two, preferably of three or four, ribs is required.

The technique is as follows: Thorough asepsis is just as necessary as in any other operation. Particular attention must be given to the skin of the patient and to the hands of the surgeon, scrubbing with green soap first for three or four minutes, then washing with alcohol or ether, and subsequently with bichloride (1 to 500). To sterilize the skin of the patient thoroughly it is advisable to cover the field of the operation with a poultice of green soap. If there is enough time, the poultice may remain for twenty-four hours. I regard this an essential factor for the disinfection of the skin, because I do not believe that under ordinary circumstances the epidermis, which shelters a multitude of pathogenic bacteria, can be rendered sterile by the usual methods of disinfection, which are generally not carried out longer than from ten to fifteen minutes. A period of twenty-four hours gives the soap a chance to permeate the epidermis thoroughly, so that scrubbing on the following day is much more effective. Sometimes, indeed, the poultice macerates the epidermis so that it can be wiped off easily.

All the appliances needed at the operation must, of course, be sterilized; the instruments, ligatures, etc., in boiling soda solution, and the towels, sponges, etc., in steam.

As a rule the eighth rib is selected. The incision, about five inches in length, should be made in the centre of the selected area and carried directly down to the periosteum of the rib. An incision is then made along both borders of the rib, and the periosteum, both in front and behind, is raised by means of a periosteal elevator. Having freed the periosteum, the elevator is pushed beneath the rib, between it and its posterior periosteum, and allowed to rest on both edges of the wound. With a blunt hook the tissues are retracted along the rib toward the axilla, and by means of bone shears the rib is cut between hook and elevator. Next, the elevator is pushed toward the sternum, forcing the rib from the last fragment of adhering periosteum; the retractor is inserted into the end of the wound, and with the scissors the rib is cut through on the other side. Now the costal pleura underneath is incised; a large aneurysm needle is introduced through one of the pleural incisions and conducted underneath the costal pleura to the other. With strong silk sutures the tissues, containing fascia, muscles, periosteum, costal pleura, and intercostal arteries, are ligated close to the surface of the rib. Then a vertical incision is made through the tissues between the two ligatures, thus creating a wide opening. By retracting the skin forcibly the skin incision can be utilized for the resection of the rib above. If, as rarely occurs in these cases, adhesions should be absent, the lung may collapse, so that it is found impossible to draw it forward, then the final incision has to be deferred for a day or more. If the lung moves freely beneath, it is essential to shut off the pleura by packing gauze tampons around the margins in order to prevent infection from the escaping pus. This procedure renders suturing of the pleura to the lung unnecessary, as well as the artificial formation of adhesions by the use of caustics. Especially if the abscess is located superficially, infection of the pleural cavity might be caused by the stitch canals. The further steps must be taken with great care and patience. If palpation of the pulmonary area has failed to give information, an exploratory needle of moderate size may be slowly pushed into the lung. If necessary, this must be repeated at different points. If the focus is not reached by the needle, the pulmonary pleura is carefully divided and the thin, slightly red-heated point of a Paquelin cautery thrust into the suspected portion. I have found it advisable to construct a thin director, made of platinum, which fits round the heated platinum tip of the Paquelin cautery, just as a stylet fits to a trocar. After the tip and encircling director have perforated the lung tissue, the tip is withdrawn and the director left *in situ* to ascertain whether any pus appears at the groove of the director. If so, a small Péan forceps is introduced and the opening is gently dilated. The great advantage of the Paquelin cautery is that it prevents infection. The exploratory needle, while entirely harmless in pyothorax, is apt to cause infection in the lung tissue.

After the cavity is exposed, no irrigation or exploration with the finger is advisable, as these procedures might provoke hæmorrhage. A narrow strip of iodoform gauze is carefully introduced into the cavity. The pleural cavity is then once more thoroughly cleaned and examined, and then packed with iodoform gauze. The whole is protected by a large piece of moss board. The dressing need not be changed more frequently than every second or third day, unless there should be signs of retention of pus. It is advisable to tell the patient to blow at intervals with his mouth and nostrils closed, which helps to evacuate the purulent discharge.

The patient should get up after a few days if possible. During the first few days of the after-treatment small doses of morphine are administered for the purpose of immobilization, especially when cough is present. If the pulse be weak, strophanthus and caffeine may be added. Nourishment must be given frequently and in small quantities at a time.

Anæsthetics should be used only if the pulse be strong enough, which in such cases is an exceptional circumstance. Ether being contraindicated in respiratory disturbance, only chloroform can be employed; and I need not call attention to the danger to which the use of this paralyzing drug subjects the heart. Since, for a well-trained surgeon, the operation does not take very long, it would be better to use an ether spray or ethyl chloride, and to give a morphine injection before the operation. Even cocaine has its dangers. If chloroform is employed, only a few drops should be poured into the mask at a time, and the pulse, the respiration, and the color of the face should be very carefully watched.

My own experience comprises four cases of lung abscess, all of which recovered. In two of the cases, however, the diagnosis of pyothorax, and in one of subphrenic abscess, had been made before resection. As the diagnosis of lung abscess, however, was made before operation in only one case, I may be permitted to give its history:

M. B., thirty-one years of age, merchant, Austrian by birth, had pneumonia when ten years of age; in November, 1895, pleuropneumonia, after which cough and copious expectoration of an offensive odor remained. Once in a while hæmoptysis, chills, and dyspnœa occurred. The treatment had consisted in the administration of expectorant mixtures and inhalations of turpentine. On February 21, 1896, the following conditions were present: The anæmic patient shows a flat thorax, which expands symmetrically. The left lung is normal. On the right side anteriorly below, tympanitic sounds, râles during inspiration. Posteriorly below, extensive dullness. Correspondingly bronchial breathing and râles. Above the apex of the heart, systolic murmur. Pulse soft, 110. Urine contains large quantities of indican. Sputa mucopurulent, about a hundred and eighty cubic centimetres in twenty-four hours. Pus corpuscles in abundance, also elastic fibres. On the following day, since the patient had expectorated but little, the dullness is much more pronounced, and the respiratory sounds are less audible. After the patient has coughed considerably the bronchial respiratory sounds become more audible again above the region of the ninth rib, where sometimes amphoric breathing can also be perceived.

On February 24, 1896, the weak patient is slightly anæsthetized with chloroform and an incision made over the ninth rib, extending from the posterior axillary line to the transverse process of the ninth dorsal vertebra. After the ninth, eighth, and tenth ribs, together with their soft tissues, were resected, the lung collapsed slightly, but soon expanded again. The pleura was packed with aseptic gauze, and then an exploratory needle was pushed forward into the centre of the exposed area. About an inch behind the pulmonary pleura gray pus, containing air and of a very offensive odor, was aspirated. After the opening was dilated, the needle having served as a guide, a little over an ounce of pus was discharged. While the cavity was packed with a small strip of iodoform gauze the patient coughed excessively. There was no hæmorrhage and no sign of shock. Twenty-four hours after the operation the patient had a temperature of 104° F., a soft pulse of 130, and a respiration of 30. There was considerable cough and copious expectoration with foul odor. After that the temperature went down gradually and the patient improved rapidly. From March 6th the patient was out of bed. The wound was obliterated by the end of April, two months after the operation. Gain in weight, twenty-three pounds. No pain or fever; once in a while a slight cough only, with expectoration of clear mucus. According to the latest news received from the patient he is perfectly well.

THE DIAGNOSIS AND TREATMENT OF GASTRIC CATARRH.

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CHRONIC gastric catarrh is a chronic inflammation of the gastric mucous membrane, which, if allowed to continue long enough, may lead to total destruction of the secretory glands, with permanent disappearance of the gastric juice.

Among its symptoms are coated tongue, loss of appetite, distress in the stomach, bloating and belching, nausea and vomiting, vertigo, palpitation of the heart, constipation, insomnia, headache, loss of energy, and diminution in weight.

Many of these symptoms, however, are associated with other forms of stomach trouble, so that it is often quite impossible to make a diagnosis either by a physical examination or by interrogating the patient. Ewald (1) has well said: "Just as readily as the diagnosis chronic gastric catarrh is made, just so little is such an offhand opinion justified in many cases, for neither the duration nor the ætiology nor the kind of dyspeptic manifestations will suffice to make a diagnosis at once, but, in addition, there must be a careful examination with the aid of all our modern diagnostic resources." Among these modern diagnostic resources nothing is so important as a chemical examination of the stomach contents taken after a test breakfast; and yet even this will not always suffice unless we have an opportunity of making more than one examination.

To illustrate this point, allow me to cite the following case which came under my notice last December:

Miss C., aged forty-two years, had been complaining for a year of insomnia, almost constant distress in the stomach, and frequent attacks of belching. She looked thin and pale, and had lost ten pounds in weight. An examination of the stomach contents an hour after Ewald's test breakfast gave the following results: The roll was not finely divided; there was some mucus; Gunzburg's test showed an absence of hydrochloric acid; Toepfer's gave an acidity of 32; total acidity, 72; biuret+, rennet+, erythrodextrin+, sugar+. She was put upon a proper diet, suitable remedies were administered, and intragastric faradization was used three times a week. For about a month there was some improvement in her condition, then she suddenly grew worse again and complained of much distress and belching. A second examination of the stomach contents was made, and now Gunzburg's test was positive after diluting the filtrate six times with water; Toepfer's test was 104, and the total acidity was 132. The diet and medicines were changed and the electricity continued. For a week the patient did well, then she grew suddenly worse one evening and vomited beef and dry toast which she had eaten for dinner. Two days afterward a third examination showed a total absence of hydrochloric acid, Toepfer's test gave no red color, and the total acidity had fallen to 60.

By comparing the results of the first and third examinations with those obtained in any well-defined case of chronic gastric catarrh it will be seen that there exists no essential difference between them. For instance, a case cited by Einhorn (2) in his recent work on *Diseases of the Stomach.* In both cases there was distress in the stomach, impaired appetite, belching, insomnia, and loss of weight. Hydrochloric acid was absent in both cases; lactic acid was present in one case and absent in the other; rennet was present in one case and not mentioned in the other; erythrodextrin and mucus were present in both cases; in one the acidity was 60 and in the other 72.

Chronic Gastritis (Einhorn).		*Dyspepsia Nervosa* (Murdoch).	
Age of patient,	26 years.	Age of patient,	42 years.
Length of time ill,	4 "	Length of time ill,	1 year.
Pain in region of stomach.		Constant distress in stomach.	
Repeating and flatus.		Frequent attacks of belching.	
Insomnia.		Insomnia.	
Hydrochloric acid,	absent.	Hydrochloric acid,	absent.
Lactic acid,	present.	Lactic acid,	absent.
Rennet,	not mentioned.	Rennet,	present.
Biuret,	not mentioned.	Biuret,	present.
Erythrodextrin,	present.	Erythrodextrin,	present.
Mucus,	present.	Mucus,	present.
Acidity,	60.	Acidity,	72.

Now one would have been perfectly justified in diagnosticating chronic gastric catarrh in the above-mentioned case if the result of one examination could have been depended upon, but a second examination served to exclude that disease and pointed to a neurosis instead. These sudden changes in cases of dyspepsia nervosa are not at all unusual; indeed, in my experience at least, they are quite common.

Chronic gastric catarrh, however, presents the opposite picture, the condition of the stomach contents not varying to any great degree for months at a time. Of this the following case will serve as an illustration:

In April, 1896, Mr. H. came to me complaining of almost constant distress in the stomach, bloating and belching, palpitation of the heart, and insomnia. He had been ill eight months, and had lost twelve pounds in weight. His chest organs were intact, except slight dullness at the apex of the left lung. His stomach was in the normal position. The gastric contents after a test breakfast contained a good deal of mucus; hydrochloric acid was absent; Toepfer's test gave an acidity of 16; the total acidity was 48; biuret reaction +, rennet +, achroodextrin +, sugar +. He was put upon a diet consisting of farinaceous food, a few vegetables, and milk. Strychnine was given three times a day and intragastric faradization and lavage were employed three times a week. These measures, however, failed to relieve the patient's distress, as did also various antifermentative remedies administered by the mouth, although none seemed to agree so well as hydrochloric acid. During the months of May, June, and July there was no improvement in the patient's condition, except that he slept better and suffered less from palpitation.

Early in August hydrochloric acid first made its appearance. With its return the patient began to improve rapidly, and on September 14th he reported a relief of all his symptoms and had gained fifteen pounds in weight.

In diagnosticating chronic gastric catarrh we must exclude, besides the neuroses, ulcer, cancer, and atrophy of the gastric glands. In ulcer the pain is much more severe than in gastric catarrh. There may be hæmatemesis, and there is frequently a circumscribed spot of great tenderness in a line between the ensiform cartilage and the navel. In cancer, the age and appearance of the patient, the length of time ill, the presence or absence of hydrochloric and lactic acids, and the presence or absence of tumor, must all be taken into consideration.

In regard to atrophy of the glands, if we find a constant absence not only of rennet, but of the rennet zymogen as well, we are forced to the conclusion that atrophy has already taken place.

In treating chronic gastric catarrh the patient should be directed to sleep in a sunny, well-ventilated room; to keep regular hours; to take his meals at stated intervals; to eat slowly; to masticate the food thoroughly, and drink nothing while eating; to bathe frequently, take regular exercise every day in the open air, and train the bowels to move every morning after breakfast.

The question of diet is also of very great importance, and yet there is considerable difference of opinion in regard to it. Klemperer favors the administration of predigested food and thinks that vegetables, because they are apt to undergo fermentation, should be avoided.

Ewald gives white bread and butter, cold meat and ham, fish and vegetables, and for beverages, tea, coffee, cocoa, milk, and light wine.

Einhorn allows his patients eggs, tenderloin steak, white meat of chicken, mashed potatoes, rice, farina, hominy, and buttered white bread; and for beverages, tea, coffee, cocoa, kumyss, matzoon, and milk.

The fact is that a diet must be selected for each individual case. If hydrochloric acid is absent, proteids should be avoided, or allowed only in small quantities. It is true that lack of stomach digestion is largely, sometimes completely, compensated for by increased intestinal digestion, but it is not well to embarrass the intestines with food which they are not intended to receive until after it has been acted upon by the gastric juice. If rennet be absent, milk is apt to disagree; and in these cases buttermilk and kumyss are often extremely useful. In regard to the use of the various digestive ferments, the ptyalin of the saliva and the amylopsin of the pancreatic juice are usually quite capable of taking care of the carbohydrates without any artificial aid. If the secretion of the saliva be diminished or absent, taka-diastase may be given with advantage; for, as recently shown by Friedenwald (3), it not only digests the starches in the stomach, but serves the other function of the saliva in stimulating the gastric secretion. If no hydrochloric acid is being secreted by the oxyntic cells, and the diet consist partly of albuminous food, hydrochloric acid may be given with the view of converting pepsinogen into pepsin. Lavage should be employed when the stomach contains much mucus. The administration of the bitter tonics, as nux vomica or strychnine, should not be neglected; and the intragastric use of the faradaic current is a remedy the value of which can scarcely be overestimated.

In view of what has been said, one would be justified in drawing the following conclusions:

1. We can not diagnosticate chronic gastric catarrh without making an examination of the stomach contents.
2. It is often necessary to make more than one examination.
3. Appropriate treatment will in many cases arrest the disease and restore the glands to a healthy condition.
4. The most important factors in the treatment are diet, the bitter tonics, electricity, and lavage.

References.

1. Ewald. *Diseases of the Stomach*, p. 338.
2. Einhorn. *Diseases of the Stomach*, p. 172.
3. *New York Medical Journal*, May 29, 1897, p. 734.

Therapeutical Notes.

Theobromine in Asystole.—Baronaki (*Semaine médicale; Lancet*, July 31, 1897) has found very great benefit from the administration of theobromine in cases of asystole in old persons due to degeneration of the muscular walls of the organ. When, however, the asthenia depends upon lung or hepatic trouble this drug is of much less value. In order to obtain its full effect he puts the patient on a purely milk diet with thirty minims of tincture of digitalis *per diem* for four days. He then substitutes for the digitalis theobromine, which is prescribed in seven-and-a-half-grain powders every two hours during the daytime, so that six powders, or forty-five grains of theobromine, are taken during the twenty-four hours. The diuretic effects of this are generally observed after a few doses and the œdema and uræmic symptoms disappear. After this result has been obtained it is not advisable to continue the use of the drug, as it is apt to produce nausea, giddiness, and mental excitement. It is best to order iodide of potassium, and then, if the symptoms of asystole reappear, to repeat the course of digitalis and theobromine. In very grave cases, where the effect of the drug rapidly passes off and there appears to be danger in giving the digitalis too often, Dr. Baronaki has found the theobromine recover its diuretic power after venesection or scarification of the lower extremities. He has no doubt in his own mind that he has been able by this method to materially prolong the lives of several old persons who, from their appearance and symptoms, would, if treated in other ways, have very rapidly succumbed to an attack of cardiac asthenia.

Ichthalbin.—The *Lancet* for July 31st says that the unpleasant taste and smell of ichthyol have, in England at least, presented serious obstacles to the internal use of this really valuable drug. Attempts have been made to disguise the odor by means of citronelle, coffee, and other substances, but unfortunately with only very partial success. The active principle of ichthyol is generally admitted to be sulphichthyolic acid, which exists in it to the extent of fifty-three per cent. This acid Dr. Sack, of Heidelberg, has recently succeeded in combining with albumin, forming a brownish-gray powder insoluble in acids, but decomposed by alkalies. This substance has neither taste nor smell and contains forty per cent. of sulphichthyolic acid, so that three grains of it are about equivalent to four of ichthyol. It passes unchanged through the stomach, but in the alkaline media of the intestine it slowly breaks up into sulphichthyolate of sodium and peptone. It has proved useful in rhachitis, anæmia, tuberculosis, syphilis, and various intestinal affections, the digestion being improved, the bowels made regular, the appetite increased, and also—often to a remarkable degree—the body weight; in several cases of eczema in children, too, it has proved beneficial. Of course, it is hardly so well suited for external employment as ichthyol itself; nevertheless, it has been successfully applied to the anus for fissures and pruritus. The dose is said to be half a teaspoonful of the powder two or three times a day. It may be taken dry on the tongue and washed down with water or mixed with a little powdered chocolate, in which way children like it best.

Ergotinol as a Substitute for Ergotine.—Abel (*Berliner klinische Wochenschrift*, 1897, No. 8; *Deutsche Medizinal-Zeitung*, July 29, 1897) considers ergotinol preferable to other preparations of ergotine on account of the ready adjustment of its doses, its prompt action, and particularly its keeping qualities. He has used ergotinol that had been kept for a year, and noticed no impairment of its activity. He has observed not a trace of unpleasant effects, even on the prolonged use of it in daily amounts of a Pravaz syringeful. The pain caused by its injection, which is its only drawback, may be almost done away with by combining with the ergotinol minimum doses of morphine or cocaine.

Carbolic Acid in Infecting Corneal Ulcers.—According to Dr. Geirsvold, a Norwegian practitioner, infecting ulcers of the cornea may frequently be very successfully treated by touching the surface with a Bowman's probe dipped in pure carbolic acid. Some of his cases were complicated by suppuration of the lacrymal ducts, and he was not obliged to use the thermo-cautery, curetting, or subconjunctival antiseptic injections.—*Lancet.*

A Remedy for Troublesome Sneezing.—In the July number of the *Zeitschrift für Krankenpflege* Dr. Koch, of Hildesheim, says that strong pressure on the hard palate with the thumb, exerted before the close of the deep inspiration that precedes sneezing, will prevent the sneeze.

Antipyrine in the Treatment of Whooping-cough.—Le Goff (*Thèse de Paris*, 1896; *Progrès médical*, July 31, 1897) recommends the following formula:

℞ Antipyrine	15	grains:
Syrup of gooseberries	300	"
Vichy water	1,200	"

M. S.: A dessertspoonful after each paroxysm, to be followed by a little milk or bouillon. According to Le Goff, from fifteen to forty-five grains of antipyrine a day may be given to a child over two years old, and from six to fifteen grains to a younger child.

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THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Our Canadian friends seem to have made due preparation for an event of great importance to them, the meeting of the British Medical Association in Montreal next week. As we understand it, it is the first time that the association has held its annual meeting outside of the United Kingdom. There is no room for doubt that the attendance will be large, for the Canadian Medical Association holds its own meeting in Montreal immediately before that of the British begins; indeed, we learn that there is to be a day of practical fusion of the two organizations, so far as the meeting is concerned, on Tuesday. But there is every reason for the Canadians to expect a goodly number to come from Great Britain and Ireland to take part in the meeting, and that number, we suppose, will determine the degree of satisfaction that they will feel in having succeeded in making Montreal the place of meeting. British physicians attended the Washington meeting of the International Medical Congress in as great numbers as could have been expected, and surely there is more to draw them to Montreal, the chief city of one of their own colonies, than to the capital of the United States.

We do not know how many Americans have been invited. The fact that in this instance our Canadian brethren took the course of sending invitations to as many American physicians as they thought they could comfortably accommodate seems to us to make it more than ordinarily incumbent on the invited to accept and attend the meeting. We are sure that the profession at large in the United States understands the Canadians' apprehension of a larger American attendance than would be desirable, realizes their embarrassment, and frankly and loyally construes their note of explanation. They have made it quite clear that they have not been governed in this matter by dislike for Americans, and he must be churlish indeed who for a moment would question their sincerity or their kindly feeling for us. Several of our national special societies have one or more Canadian members. Those members attend almost all the meetings, and their presence is enjoyed to the utmost. There is no ill feeling or misunderstanding between the physicians of Canada and those of the United States. The Canadians are always welcome here, and we feel certain that the sentiment is reciprocated. Two of the formal addresses to be delivered before the Montreal meeting will be given by residents of the United States. The fact that one of the two gentlemen chosen to prepare these addresses is a Canadian by birth and the fact that he was formerly a distinguished physician of Montreal, as he is now of Baltimore, have given Canada this opportunity of making it known that she does not cease to cherish her children simply because, in obedience to creditable motives, they have left her territory. The "Lady of the Snows" is not cold-hearted toward us, and we shall join in her joy at the success of the Montreal meeting.

THE RADICAL CURE OF INGUINAL HERNIA BY AN OPERATION IN WHICH THE COURSE OF THE SPERMATIC CORD IS CHANGED.

Two Paris surgeons, M. Nélaton and M. Ombrédanne, have contrived and practised an ingenious operation whereby they divert the proximal part of the spermatic cord from the inguinal canal and cause it to run through a hole made in the pubic bone. They are thus left free to treat the inguinal canal without regard to the cord, and are able to close it more effectually than by Bassini's operation. They describe their procedure in the *Presse médicale* for July 31st. The anterior wall of the inguinal canal is slit up for its entire length, the hernia is reduced, the sac is resected, and the spermatic cord is freed from adhesions and from its connections with the cremasteric fibres, all the more carefully the greater may be the tendency of the testicle to hug the ring. The posterior wall of the canal is then divided on a grooved director thrust through it at the upper border of the pubic bone and passed upward to the internal ring. Then, with an instrument like a punch, a button of bone as large as a centime piece is removed from the thin part at a point not quite a third of an inch below the upper border. A chain-saw is passed through the hole, and the superjacent bridge of bone is divided at its inner edge. This bridge is then raised in an outward direction by means of a sequestrum forceps, its outer periosteal connection being preserved, and the cord is dropped into the perforation of the pubic bone, after which the bridge is replaced and secured in position with catgut sutures. The abdominal wall is repaired in two layers. The deep layer is closed with a continuous suture, of the variety known as the *suture en surjet*, carried from the conjoined tendon to Poupart's ligament. With the same thread the superficial layer, constituted by the aponeurosis of the external oblique muscle, is closed from below upward.

The advantages of this operation as a means of curing hernia seem undeniable. Its authors point out, too, that the altered course of the spermatic cord virtually lengthens it so as to allow of more complete descent of the testicle in cases in which that organ is unduly retracted. A disadvantage that may pertain to it is the danger of eventual damage to the spermatic cord by a growth of new bone around it. This the authors themselves have taken into consideration, and they admit that the danger may prove real. Thus far it has not shown itself in any of their seven cases, but it must be borne in mind that their first operation was performed no longer ago than on May 25th. They do not think that serious compression of the cord is likely to occur, but they are prepared for it; it would be productive first of varicocele and œdema, and there would then be time to liberate the cord by cutting a channel downward and dropping it beneath the bone.

INJECTIONS OF OIL INTO THE VASA DEFERENTIA TO PRODUCE ATROPHY OF THE PROSTATE.

There has been much activity of late, says M. Bernoud in *Lyon médical* for August 1st, in the treatment of prostatic hypertrophy by division of the vasa deferentia, a procedure which he thinks is gaining ground and is destined to supersede the operations previously in use, more especially castration. M. Bernoud is an interne of the Lyons hospitals, and he says that the idea recently occurred to M. Jaboulay, the surgeon under whom he is serving, to throw a large injection of oil into each cut end of the vas deferens before tying it, in order to produce atrophy of the prostate by the same mechanism as that by which Claude Bernard and others caused atrophy of the pancreas by throwing a like injection into the pancreatic duct.

M. Jaboulay's idea has been carried into effect. The patient, a man seventy-seven years old, had had gonorrhœa complicated with orchitis when he was thirty years old. He had never had syphilis, alcoholism, or malarial infection. Four years before his entering the hospital he had had an attack of retention of urine, and two years after that micturition had begun to be difficult. He was obliged to get up often at night to pass urine, and he had soon got into the habit of using a catheter. His trouble had progressed and it was now only with the greatest difficulty that the catheter could be passed. He was suffering with retention at the time of his admission, and there were all the physical and functional signs of an enormously hypertrophied prostate; on rectal examination, its lobes appeared as large as a hen's egg.

On May 25th the vasa deferentia were divided by the usual method; then, the vas deferens having been isolated, each cut end was seized in turn and two Pravaz syringefuls of iodoformized oil were forced into it, and it was tied. The wounds were closed with sutures. In two or three days after the operation the patient felt better and urinated more easily, so that he could begin to dispense with the catheter. Moreover, daily examination of the bladder revealed no retention. On the 2d of June, in eight days after the operation, cicatrization was complete and the man declared that he could pass water as well as ever. On rectal examination, it was observed that the prostatic prominence had disappeared entirely.

The author disclaims any intention of drawing too general conclusions from this one case. We know, he says, that prostatic hypertrophy is a capricious affection susceptible of temporary amelioration, a relief from congestion which may simulate a definitive cure; and therefore we should be a little skeptical in estimating the results of operations. He thinks that in the case related there was certainly something more than simple coincidence between the operation and the sudden subsidence of so pronounced an impediment as the man suffered from, together with the physical signs of the complete disappearance of the hypertrophy.

MINOR PARAGRAPHS.

A NEW SIGN OF PHRENIC NEURALGIA.

Before the Paris Société médicale des hôpitaux, at its meeting of July 30th (*Journal des praticiens*, August 7th), M. Jousset insisted upon the existence of a constant painful point situated precisely in the median line of the sternum, at the level of the fourth or fifth chondro-sternal articulation. It should not be confounded, he said, with the diffuse retrosternal pain observed by Peter in chronic affections of the aorta. The point was of importance, absolutely decisive, in cases in which one was in doubt whether to refer an epigastric pain to the diaphragm, the gall bladder, the stomach, the abdominal wall, or the intercostal nerves.

CLUBHAND.

Monguidi (*Archivio di ortopedia*, 1897, No. 3; *Centralblatt für Chirurgie*, August 7, 1897) describes two cases of this abnormity. The first was in an immature fœtus, and an adequate anatomical examination was impossible. The hands were decidedly flexed, and there was radial abduction. There were no thumbs. On the right side the upper third of the radius was present; on the left the bone was wanting altogether. The second case was that of a child in whom the right radius and thumb, together with its metacarpal bone, were wanting. The index finger was a boneless appendage to the middle finger. The carpal bones of the first row were cartilaginous; of those of the second, the os magnum, the unciform, and the trapezoid were present. The biceps was inserted partly into the ulna and partly into the flexor digitorum profundus. Each flexor digitorum had only three tendons. There was no radial artery, and the radial nerve was lost in the muscles of the forearm. The hand was in the attitude in which it is generally found in such cases. On the left side the hand was excessively flexed, and the thumb was only a cutaneous appendage. The second and third joints of the index, ring, and little fingers were lacking, and the middle finger showed an annular constriction. The lower epiphysis of the radius was wanting, and into the formation of the wrist joint entered only the ulna and the semilunar and cuneiform bones, which constituted the first row of carpal bones. The trapezium was absent from the second row.

EVENTRATION IN CHILDREN.

Budinger (*Wiener klinische Wochenschrift*, 1897, No. 21; *Gazette hebdomadaire de médecine et de chirurgie*, August 8, 1897) reports a number of cases in which boys from five to nine years old, previously in perfect health, have become the subjects of persistent dyspeptic troubles. The appetite is impaired and they decline certain articles of food which are particularly apt to engender gas and consequent epigastric pain, such as bread and potatoes. From time to time, in the midst of their play, these children are seized with gastric colic. They suddenly stop playing, turn pale, and bend forward, at the same time pressing with their hands on the pit of the stomach. In every such case the author has found separation of the recti muscles extending from the ensiform cartilage to the navel, their inner edges forming the boundaries of a lozenge-shaped space. All the symptoms have been controlled by the application of overlapping strips of diachylon plaster as wide as one's finger. If this irritates the skin, salicylated-soap plaster may be used instead.

A HAIRPIN IN A CHILD'S VAGINA.

Krause (*Berliner klinische Wochenschrift*, 1896, No. 37; *Deutsche Medizinal-Zeitung*, August 5, 1897) relates the case of a little girl, six years old, who for about two years had suffered with leucorrhœa that resisted all internal treatment. When the child came under the author's care it was already much reduced by its sufferings. Local examination showed the presence of a hairpin in the vagina. It was removed with great difficulty under chloroform anæsthesia, and perfect recovery followed. It was ascertained that it had been inserted by a discharged servant girl two years before, for the purpose of revenge.

SERUM PROGNOSIS IN TYPHOID FEVER.

At a recent meeting of the Lyons Société nationale de médecine (*Lyon médical*, August 8th) M. Courmont gave a *résumé* of a portion of an inaugural thesis of his in which he attributed prognostic significance to the degree of agglutinative reaction. If there was a progressive rise having its fastigium coincident with the fall in the temperature curve, followed by a descent parallel with that of the temperature, the prognosis was very favorable. In cases that were serious from the clinical point of view a slight agglutinative power was unfavorable. A retarded serum reaction, one not shown until after the seventh day, was met with in both the grave and the very mild cases. A feeble agglutinative power at the height of the fever was of unfavorable import.

THE HEALTH OF SEATTLE.

It is particularly reassuring in these times of renewed activity in the gold fields of the Northwest to find that the health of the city of Seattle is well looked after, for it is a place which, as is reported, the gold-hunters of Alaska flock to whenever for any reason they leave the gold regions temporarily. We are told by Dr. Robert M. Eames, the health officer and secretary of the board of health, that Seattle has a lower death rate than that of any other city of its size in the United States. According to the board's *Monthly Report* for July, there were only thirty-four deaths from all causes during that month. The population is 60,000.

A NEW SIGN OF MYOCARDITIS.

De Renzi (*Rivista clinica e terapeutica,* 1897, No. 2; *Centralblatt für innere Medicin,* August 7, 1897) states that in cases of myocarditis pressure on the region of the heart gives rise to a much more heightened activity of the heart and increased volume of the pulse than in healthy persons.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 24, 1897:

DISEASES.	Week ending Aug. 17.		Week ending Aug. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	27	8	33	5
Scarlet fever	75	3	79	1
Cerebro-spinal meningitis	1	0	0	0
Measles	79	5	73	4
Diphtheria	146	23	135	15
Croup	4	2	2	1
Tuberculosis	145	101	186	79

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the Marine-Hospital Service during the week ending August 21, 1897:

Small-pox—United States.

Birmingham, Ala	May 8–Aug. 14	96 cases,	1 death.
Montgomery, Ala	Aug. 7–13	28 cases.	

Small-pox—Foreign.

Nagasaki, Japan	July 13–20	10 cases,	2 deaths.
Cardenas, Cuba	July 31–Aug. 7		2 “
Singapore, India	June 1–30		7 “
London, England	July 24–Aug. 7	2 “	2 “
Glasgow, Scotland	July 24–31	3 “	
Sagua la Grande, Cuba	July 24–Aug 7	70 “	10 “
Montreal, Canada	July 2–26	14 “	5 “
Rotterdam, Holland	Aug. 1–7	1 case.	
St. Petersburg, Russia	July 24–31	6 cases.	

Cholera.

Bombay, India	July 13–20		32 deaths.
Singapore, India	June 1–30		1 death.
Kioto Fu, Japan	July 16–25	1 case,	1 “
Osaka Fu, Japan	July 16–25	2 cases,	2 deaths.
Tokio Fu, Japan	July 16–25	8 “	5 “
Fukuioka Ken, Japan	July 16–25	2 “	2 “
Kanagawa Ken, Japan	July 16–25	4 “	2 “
Saitam Ken, Japan	July 16–25	1 case,	1 death.
Calcutta, India	July 3–10		23 deaths.
Colombo, Ceylon	July 3–10	3 cases,	3 “

Yellow Fever.

Cienfuegos, Cuba	Aug. 1–8		6 deaths.
Cardenas, Cuba	July 31–Aug. 7		2 “
Matanzas, Cuba	July 28–Aug. 4		4 “
Sagua la Grande, Cuba	Aug. 1–7	65 cases,	8 deaths.
Manzanillo, Cuba	July 17–31		2 “
Kingston, Jamaica	July 17–24	1 case.	

Plague.

Kanagawa Ken, Japan	July 16–25	1 case,	1 death.
Formosa, Japan	July 16–25	4 cases.	
Bombay, India	July 13–20		9 deaths.

The Medical Society of New Jersey.—Dr. D. C. English, president of the Medical Society of New Jersey, has appointed Dr. William Pierson, of Orange, third vice president of the society, to fill the vacancy occasioned by the death of Dr. John J. H. Love, of Montclair. He has also appointed Dr. William J. Chandler, of South Orange, recording secretary in place of Dr. William Pierson, resigned. Dr. Pierson belongs to one of the oldest, most prominent, and most respected families in the State. He has been for thirty-one years the able and efficient secretary of the society, and was in 1894 elected an honorary member, when he declined the office to which Dr. English has just appointed him. His father, Dr. William Pierson, Sr., also served the State society as its secretary for thirty-one years, and was elected third vice-president in 1866 (when his son became his successor as secretary), and he became president in 1869, according to the customary advancement in office. Dr. Chandler was graduated in 1868 at the College of Physicians and Surgeons (Columbia), New York, and is one of the most prominent physicians in Essex County.

The Institute of Hygiene of Costa Rica.—Dr. T. M. Calnek, a member of the international executive commission of the Pan-American Medical Congress, in a recent report to Dr. Charles A. L. Reed, of Cincinnati, speaks encouragingly of the work of the National Institute of Hygiene of Costa Rica. The antitoxines of diphtheria and tetanus are received monthly in sufficient quantities, and are furnished free to the poor and at cost to those who can pay. The antitoxine treatment of diphtheria and that of tetanus have proved very satisfactory. No provision is made for the antitoxine treatment of rabies, as that disease is unknown in Costa Rica.

James Greig Smith, M. A., C. M., M. B., F. R. S. E.—Mr. James Greig Smith, one of the most brilliant surgeons of England, died at his late residence, Bristol, England, May 28, 1897, of pneumonia, aged forty-three years. He was born near Aberdeen in 1854, and was educated in that city; graduated in arts in 1873, and in medicine in 1876. He became surgeon on the staff of the Bristol Royal Infirmary in 1879, when he was only twenty-five years of age. He soon became known as a great surgeon and a great writer on surgery. His treatise on abdominal surgery is now going through a sixth edition, and has been translated into French, German, and Italian. Many of those who have heard so much from and about Greig Smith during the last fifteen years will be surprised to learn that he was so young a man. The loss of such a man at such an age is a serious loss to a nation.—*Canadian Practitioner.*

The Northwestern University Woman's Medical School, of Chicago.—We learn that an addition to the college buildings is in course of construction that will double the laboratory and clinical facilities, and that the number of paid teachers has been greatly increased.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 15 to August 21, 1897:*

Bache, Dallas, Colonel and Assistant Surgeon General. The leave of absence granted him is extended one month.

Harris, Henry S. T., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect upon his relief from duty at Fort Preble, Maine.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending August 21, 1897:*

CABELL, A. G., Surgeon. Detached from the U. S. Steamer Monongahela, ordered home, and to be ready for sea.

MORGAN, D. H., Assistant Surgeon. Detached from the U. S. Steamer Monongahela and ordered to the U. S. Steamer Cincinnati.

PLEADWELL, F. L., Assistant Surgeon. Detached from the U. S. Steamer Texas and ordered to the U. S. Steamer Nashville.

WHEELER, W. M., Assistant Surgeon. Detached from the U. S. Steamer Oregon and ordered to the Mare Island Navy Yard for duty in connection with the U. S. Steamer Marietta.

Births, Marriages, and Deaths.

Married.

BROWN—DEVOLL.—In Nunda, N. Y., on Thursday, August 19th, Mr. George B. Brown, son of Dr. John P. Brown, and Miss Alice Devoll.

Died.

KOLLOCK.—In Cheraw, South Carolina, on Tuesday, August 17th, Dr. Cornelius Kollock, in the seventy-second year of his age.

PYNCHON.—In Huntsville, Alabama, on Friday, August 20th, Dr. Louis C. Pynchon, in the sixty-seventh year of his age.

Letters to the Editor.

MEDICAL MATTERS, ETC., IN GREECE.

ATHENS, *July 30, 1897.*

To the Editor of the New York Medical Journal:

SIR: During these last two months, while you in New York may have had many days of extreme hot weather combined with much humidity of atmosphere, I have been enjoying the heavenly climate of Athens. It is true there is extreme heat here during the hours from 10 A. M. to 4 P. M., but the humidity is never more than 60°, and there is, without exception, most lovely coolness after 4 P. M. until 10 the next morning.

I have often felt amused, sometimes annoyed, when I have read articles on Athens written by tourists who had been one or two days in the city. I recollect such a paper which appeared in one of our first-class illustrated magazines. The author, a reverend gentleman, had been staying in Athens two days in all. He was addressed as "Kurie," and people said "Kali merra" instead of "good day," and this was all he wrote about the Greek language. Whatever my shortcomings may be, I have done better than that author; I have waited two months before writing to you.

Perhaps nothing is more amusing than the involuntary drollery of the man in the shabby full-dress suit in a dime museum. "Here, ladies and gentlemen, you see two busts: this is Cæsar's and the other Pompey's; they are very much alike, especially Cæsar." This is about the style in which the essays on modern Greek history and the modern Greek language in the two popular guide books, Murray and Baedecker, are treated. It is absolutely necessary—in order to be benefited and to do justice to ourselves and to this country—that we should read better books on Greek history and the Greek language.

Some Italian proverb advises everybody not to die before having seen Naples, and Lysippo says: "Stupid is the one who has no desire to see Athens; more stupid he who is in Athens and is not pleased." I agree with him.

In Naples I stayed only two days, and therefore I can not give much that may be of value about that city. The beauty of the interior of the churches in Naples is not spoiled by the presence of benches or pews, and there are no carpets to accommodate the microbes. I imagined what a healthful exercise it would be for our own church people to have to stand during divine service, especially during long sermons. I visited, as a matter of course, the museum and went to Pompeii. In the streets of Naples there are many clergymen; the monks in their habits of the middle ages present an historical and romantic aspect. There are also numberless "miserabili," who annoy you constantly. On the whole, life in the streets of Naples is most interesting; people are much more comfortable in the climate of Naples than they are in our own. In the hotel I found the floors of our rooms tiled. Indeed, it is a great pleasure to live and sleep in a room with a perfectly clean floor, cleaner than the stone floors in our best operating rooms in New York.

In Patras there is a public hospital (*Δημοτικὸν νοσοκομεῖον*) with about a thousand patients a year, and an Astyclinic (*Ἀστυκλινική*) with a like number of patients. Like almost all hospitals and schools in Greece, this hospital was erected, paid for, and endowed by some philanthropist or philanthropists. It has only five thousand dollars a year to cover expenses. The physicians showed me much courtesy. I saw Dr. Θεόδωρος Ν. Ζαΐμης, whose family name figures prominently in the history of the Greek war of independence, Dr. Ἰωάννις Κ. Μουτούσης, and Dr. Παπαρταθόπουλος. Like almost all Greek physicians, each one of these gentlemen spoke fluently either German or French or both languages. I saw Dr. Ζαΐμης amputate a breast, and was shown some interesting cases among the wounded soldiers who had been brought in from the war. Nicolaus Pitsula, volunteer, fifty years old, had been wounded a month before. A ball had passed through the spinous process of the fourth dorsal vertebra and lodged in the right side of the thorax. The patient came into the Patras hospital with empyema of the right side; some pus was escaping through the gunshot wound. The heart was dislocated toward the left side, the temperature was 102·2° F., and there was dyspnœa. A piece of the posterior portion of the right ninth rib was resected. It was five centimetres (about an inch and three quarters) long. Through the wide opening came much pus, and a piece of the spinous process of the size of a finger nail, two pieces of uniform, each of the size of a silver dollar, and finally a Martini ball were extracted. The patient's condition improved; the temperature fell and remained between 99·5° and 100.4° F.

Dr. Παπαρταθόπουλος took me to the Foundling Asylum (*Δημοτικὸν βρεφοκομεῖον*). There were a hundred and twenty children. The city gives thirty thousand francs yearly toward the support of the asylum. The expenses last year were forty thousand francs (eight thousand dollars). The nurses are women from Patras.

The good results which we find in all Greek hospitals, at least in all I have seen in Patras, and later on in Athens, are greatly due to the most incomparably pure atmosphere, which comes in aid of medical and surgical skill. Infection is remarkably rare.

In Athens I have visited and been well received by three of the most prominent philologists, all three professors of Greek—two of the University of Athens, one of the theological seminary. They were Professors Παπαδημητρακόπουλος, Χατζιδάκης, and Ἀργυριάδης. Each of these gentlemen is well known in scientific philological literature, and each of them has been studying classical philology, not only in his own country, but also in German universities. Professor Παπαδημητρακόπουλος has written a most exhaustive work, based on recent studies of inscriptions, on Greek pronunciation; Professor Χατζιδάκης is the author of the celebrated work *An Introduction to the Study of Modern Greek Grammar*, which was published in Germany a few years ago, and Professor Ἀργυριάδης is the author of an original work on Thucyidides. For some time I was almost daily in the society of a young Greek philologist, Mr. Κουρουνιώτης, doctor of philology, member and ephoros of the Archæcological Society of Athens. My object in visiting these gentlemen was to speak of my intention to address our Academy of Medicine some day, in order to make a proposition in regard to the publication of a truly scientific and correct anatomical nomenclature. I shall confine myself to giving briefly some remarks of these prominent gentlemen. The more important information I received will be the base of a special communication on my return to New York. If the daily press, or if writers who do not treat matters of science, who are not men of science, use a language which is unscientific, which is incorrect, we have to excuse it to a great extent. A great many words supposed to be Greek (ἑλληνοφανής) have been formed by foreigners and have been generally adopted by foreigners. It will be difficult or impossible to eliminate such words, but naturally enough they must appear atrocious to the Greeks. As an example may serve the impossible word "telegram." The correct, the real Greek word is τηλεγράφημα. Men of science in their scientific writings should never employ terms which are unscientific, which are incorrect. I mentioned for the purpose of illustration the words "polyclinic" and "policlinic," and told of the extensive controversy which had been going on in Germany and in America about spelling the word in the one way or the other. Polyclinic is pleonastic and policlinic is impossible. Πόλις means city and ἄστυ means city, but, without going into details, sufficient to say there is a distinction between the two words. The only correct word for the institution in question is ἀστυκλινική (astyclinic). As little as one can say πολίατρος instead of ἀστύατρος, so little can we say πολικλινική instead of ἀστυκλινική. It is to be hoped that all our policlinics and polyclinics will now call themselves astyclinics. They can not do otherwise if they wish to be correct.

Every one knows that Athens possesses monuments of art superior to any others to be found anywhere in the whole world. The monuments in Athens date from the most brilliant epoch of the classical period. Every one has heard of the incomparably wonderful climate and magnificent scenery of Athens and its surroundings. I can not say which of the three have impressed me most favorably: the wonders of art, those of Nature, or the thousand good qualities I have seen in the Greeks themselves. The Greeks, notwithstanding their faults—no nation is free from faults—notwithstanding their mistake in going to war altogether unprepared against a foe well prepared, well supported, and thrice as numerous, the Greeks not only have been, but never have ceased to be, to this very moment, the noblest race. Whoever studies the true history of this people, and becomes well acquainted with their character, will come to this conclusion. For a long time—that is, ever since 1821—the greatest enemies of the Greeks have not by any means been the Turks, but the great powers of Europe, the press of Europe, and all those who judge the Greeks from the literature of infernal calumniators which has accumulated ever since the time of the fourth crusade.

One of the first gentlemen on whom I called here was the Hon. Eben Alexander, our American minister to Greece. Mr. Alexander was formerly professor of Greek in the University of North Carolina, and is now one of the most respected, most beloved men in all Athens. I have heard this from all sides, and I have read it in the papers, and Mr. D. Bikelas, the great Greek historian and poet, said to me: "Mr. Alexander is one of the best, if not the very best, of all the ministers any country ever has sent to Greece. Mr. Alexander aided me materially in gathering information, especially statistical, in allowing me full access to his library with numerous official publications. In his house, where I was permitted to work for hours, I have been able to establish facts which will set at rest many atrocious calumnies against Greece."

There exists no alcoholism in Greece. Even the bitter enemies of Greece, the tourists, who are faultfinding all the time, in their publications generally mention that they never saw drunken people in Greece. The Greeks live plainly, moderately, and much more according to the laws of Nature than the people in Europe or elsewhere in the civilized world. Obesity, even, is extremely rare here. There are fewer crimes committed in Greece than in any other state of Europe. The only crimes which are comparatively frequent are those of violence. Southern blood, easily excitable, although by no means ill-tempered—a little dispute about a trifle, words are exchanged, the dispute becomes hot, the blood boils; everybody, at least of the country people, constantly carries arms; the knife or the pistol is drawn—there is a victim. Thieving is extremely rare. I am well acquainted with a thoroughly informed gentleman of the post-office department, who assures me that dishonesty among the Greek post-office employees is almost unknown. If I did not fear to go beyond the limits of space I could illustrate this fact still more by telling of the way in which money is exposed in large amounts on the very sidewalks of Athens by the money changers, sometimes almost with as much confidence as the newspapers on a news stand in New York. But you have the illustration in New York itself. There these many years there have been living between two and three thousand—mostly young—Greeks of the poorest class. I do not remember that I ever heard that any one of them was accused of stealing, although our police, after having made them pay a license for peddling fruit, arrest these innocent people under all sorts of pretexts all the time: in fact, because they sell fruit. But let us see further what it means—a people without alcoholism. In the year 1885, when Greece had a little over two millions of inhabitants, there were in the whole kingdom 1,503 blind, 1,084 deaf, and *1,088 insane.* I learn that the comparatively small number of the insane in Greece has been much spoken of. I myself became aware of this fact only after I studied the official statistics. I am convinced that almost everything which is in the least favorable to Greece has been suppressed by writers. But we shall find more wonderful facts to show what it means, a people without alcoholism. The latest statistics which I have had access to, for the year 1893, show the following remarkable figures:

1 in 3,020 inhabitants of Greece reaches an age of 85–90 years.
1 " 4,354 " " France " " " 85–90 "
1 " 5,918 " " Greece " " " 90–95 "
1 " 20,000 " " France " " " 90–95 "
1 " 11,000 " " Saxony " " " 90–95 "
1 " 11,988 " " Greece " " " 95–100 "
1 " 83,145 " " France " " " 95–100 "
1 " 16,678 " " Greece " " " 100 or more years.
1 " 352,947 " " France " " " 100 " " "

Abject poverty is extremely rare. The Greek laborer is generally industrious, attached to his family, anxious for the education of his children, and equal, if not superior, to the peasantry of any of the other states of Europe. There exists hardly any beggary in Greece. The present time—where, with the many refugees (about two hundred thousand) who themselves do not beg, because they receive their daily support from the Government, came a lot of professional beggars from Turkey—is an exception. You see indeed some beggars in Athens, but upon inquiry you will learn that they are from Constantinople or other foreign places.

A few days ago I had the extreme pleasure of seeing a number of colleagues here who were on their way to Moscow. They were, first of all, my old, esteemed friend Dr. N. Senn, of Chicago, with his son, a medical student; Colonel and Surgeon W. H. Forwood, United States Army; Dr. George Ryerson Fowler, of Brooklyn; Dr. W. F. Southard, of San Francisco (editor of the *Pacific Medical Journal*); Dr. T. M. Lloyd, of Brooklyn; Dr. D. R. Brower, of Chicago; Dr. E. Root, of Hartford; Dr. Wear, of Fargo; Dr. Lucy Waite, of Chicago; Dr. Casey Wood, of Chicago; and Dr. Woods, of Brookline, Mass. We went to the different hospitals together. They were all well pleased with their visit to Athens. Since Dr. Senn intends to publish an account of our visit to the hospitals here, I wish to abstain from giving you the description, but wish to refer your readers to Dr. Senn's letter.

I imagine already the pleasure which I hope is in store for me when, on my return to New York, I may be permitted to tell a thousand beautiful and noble things about Athens and the Greeks. My most pleasant time here I had when I came in contact with the gentlemen already mentioned and some other prominent Greeks—Mr. Μπότασσης (Botassi), the brother of our Greek consul general in New York, the banker, Mr. Πασπάτης—and told them of the interest manifested among Americans in Hellenism. They did not get tired of listening to all I had to communicate.
A. Rose, M. D.

TEETHING AND DIARRHŒA.

119 East 128th Street, *August 7, 1897.*

To the Editor of the New York Medical Journal:

Sir: The average human mind is so constituted that it dislikes middle ground. A theory is either *all* true or *all* false. A method of treatment is either always right or always wrong. Whenever, therefore, there is a reaction from an erroneous theory or a faulty method of treatment, the reaction is sure to go to an extreme. For centuries our hapless patients were bled profusely, in and out of season, bled—frequently to death. When a revulsion of feeling finally did take place, the method was discarded entirely, being condemned in the severest terms of indignation; and only now, after many years of oblivion and obscurity, venesection is again coming to the front; because we are beginning to see that in certain cases it is one of the most valuable therapeutic measures at our command.

The abuse of ergot led in some quarters to the total abandonment of this extremely valuable drug in obstetric practice, and I once heard a young professor exclaim, somewhat precipitately: "It would have been far better if ergot had never been known to the medical profession!" It is the same with the "teething" theory. From time immemorial all infantile troubles, diarrhœas, convulsions, fevers, etc., were ascribed to "teething." When our information became more extensive, when our knowledge of the ætiology and pathology of disease became more exact and we saw how frequently we erred and blundered, a reaction set in and the dictum went forth: "Dentition plays no rôle whatsoever in the causation of the gastro-intestinal diseases of children." This is certainly as wrong as the old tendency was to make dentition the universal scapegoat. It is my firm conviction, based upon a careful observation of facts, that, while by far the greatest proportion of cases of children's diarrhœas is due to two great causes, unsuitable food and infection by pathogenic bacteria, there is a number of cases where dentition is the sole ætiological factor. How otherwise can we interpret, for instance, the following train of symptoms? A child is perfectly well. Suddenly it becomes peevish and irritable, it loses its appetite and sleep, and diarrhœa or constipation sets in. The gums are examined and are found tense, hot, and painful. A soothing application is made to the gums and the symptoms are relieved.

My formula is this:

℞ Potassium bromide	30 grains;
Chloral hydrate	10 "
Deodorized tincture of opium	10 drops;
Glycerin	2 drachms;
Cherry-laurel water, or Bitter-almond water,	enough to make 1 ounce.

M. S.: Rub over the gums with a piece of linen.

The tooth breaks through and all the symptoms disappear instantly, as if by magic. The child gets along well until the eruption of the next tooth, when the same symptoms are repeated, only to disappear with the appearance of the tooth above the surface of the gum.

Those who have fairly large opportunities and observe carefully can not have failed to meet with cases similar to the one described above. And not to admit dentition as the sole factor in such cases, indicates a biassed judgment.

Many years ago the words of a noted professor of philosophy—it was in the course of a lecture on Giordano Bruno—made a lasting impression upon my mind. He said: "No system of philosophy, no theory is absolutely true; none is absolutely false. Truth always comes contaminated with falsehood; the false always contains in it some truth. *The question is one of proportion only.*" It is to *medical* theories, hypotheses, and methods of treatment that these words seem to me to be most applicable.
William J. Robinson, M. D.

Kansas City, *August 13, 1897.*

To the Editor of the New York Medical Journal:

Sir: After reading the letter of Dr. Baker on Teething and Diarrhœa, in your issue of August 7th, I think the doctor must be mistaken as to the percentage of American physicians who believe that teething is the sole cause of all diarrhœa in children, and in error when he says, "Teething is never the cause of a diarrhœa."

There is, of course, a widespread notion among the laity that difficult teething causes diarrhœa, but surely nine tenths of the profession do not think it is the sole cause. They are not so taught either in college or in text-books. Professor Eaton, of the Kansas City Medical College, according to the writer's lecture notes, spoke of dentition as one of a variety of ætiological factors in diarrhœa in infancy. Dr. Lester, the present incumbent of that chair, makes similar statements in his lectures; and the graduates of this college, I am sure, do not go away with the idea that teething is the sole cause of diarrhœa.

That difficult and delayed dentition does have a causative connection with disturbances of digestion the consensus of medical opinion allows. It may not be frequent, as Holt distinctly states. It is certain that delayed and difficult teething produces serious disturbances. Every practising physician knows this. Ease from fretfulness, nervousness, crying, and "spasms" is sometimes acquired at once on lancing inflamed and tense gums; and after the appearance of the teeth these and other troubles pass entirely away.

The writer has this moment been interrupted by the father of a babe, eleven months old, with not a tooth through yet. This child has had several attacks of diarrhœa, the last continuing several weeks before I was called in and resulting in meningitis. I left the babe convalescent several weeks ago. Its improvement since has been steady, though slow. The father now says diarrhœa is beginning again, notwithstanding every possible attention to the diet and nursing, the mother herself being an intelligent trained midwife. Think for a moment what occurs in a case like this, of long-continued and apparently futile efforts of Nature in the evolution and projection of the teeth; think of the volumes of nervous force which are sent again and again to aid in the difficult phenomenon. Is it to be wondered at that the processes of digestion are seriously interfered with? Other physiological processes likewise may be impaired by this undue determination of nerve force to the dental machinery, if we may so speak. But the stomach and digestion, being the chief organ and function of babyhood, are more likely to feel the loss of the normal nervous supply which the abnormal dental condition entails. Add to this errors in diet, and the terrible oppressiveness of the atmosphere during the hot July and August days, and the numerous deaths of infants from diarrhœa and other causes are reasonably accounted for. For myself, I must still think there is some causative relation in some cases between teething and diarrhœa.

Joseph Clements, M. D.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Congress, held in Washington, D. C., Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. Charles H. Knight, of New York, in the Chair.

The President's Address.—(See page 273.)

Guaiacol as a Local Anæsthetic in Minor Operations on the Nose and Throat.—Dr. James E. Newcomb, of New York, read a paper on this subject. (See page 276.)

Dr. H. L. Swain: I should like to inquire if Dr. Newcomb has made any observations upon the penetrating power of guaiacol as an anæsthetic. I mean in operations where there is need to go some distance beneath the surface—in sawing the sæptum, or curetting, for instance—whether he would get as much penetration with guaiacol as he would from the use of cocaine.

Dr. Newcomb: So far as I observed, I found the anæsthesia as complete as with cocaine, allowing the requisite amount of time for the guaiacol to act, as it is much slower in producing its effects than cocaine. If any one were to use this remedy and forget that it requires from fifteen to twenty minutes to produce its anæsthetic effect he would be disappointed with it. In answer to the question of Dr. Swain as to its penetrating power, I would say that it is quite as great as cocaine, but slower. So far as sæptum operations go—in sawing, for instance—I have been pleased to see how complete the anæsthesia was. In four cases that I can recall I inquired on this point of the patients, though without asking any leading questions, and they all declared that the operation had been free from pain. At the request of several of the fellows, I will read the formula again for the solution: "To a given quantity of olive oil, add ten per cent. of dried sulphate of zinc, by weight. Heat this over a water bath for an hour, filter, and then introduce twelve and a half per cent., by weight, of absolute alcohol. Shake occasionally for a few days, then decant, and introduce five per cent. of pure guaiacol."

Submucous Hæmorrhage of the Vocal Cords.—Dr. S. W. Langmaid, of Boston, read a paper on this subject. (See page 278.)

Dr. J. W. Gleitsmann: I reported a case of laryngeal submucous hæmorrhage to this association as long as nine years ago. It was quite different from those just reported in its origin, and also in the appearance of the submucous effusion. It was caused by a very severe blow received on the larynx, producing a contusion of the posterior part. There was considerable effusion in this part, especially over the arytænoids, and it extended forward over the ventricular bands to the junction of the middle and anterior thirds. There was free hæmorrhage; the man spat blood for three or four days; soon afterward the effusion disappeared by absorption. If I am not mistaken, our late fellow-member, Dr. Morgan, reported a case, also in a singer, in which the ventricular band was swollen. After the blood was wiped off from the surface, and the swelling reduced, he found a lesion also in the vocal cord; therefore there was a lesion of the vocal cord as well as of the ventricular band. Both of these cases, I remember, recovered without any difficulty.

Dr. C. E. Bean: It was some ten years ago that I reported two cases of submucous hæmorrhage of the vocal cords to this association. In one case it was a recurrent hæmorrhage; three times, I think it was, that it occurred—it has been so long that I hardly remember—but this man was not a singer, he was a business man in ordinary position in life, and with no reason for any great strain upon his vocal cords. It is true that, as in Dr. Langmaid's cases, there was a catarrhal condition, that had existed for several years previous to the hæmorrhage, and, contrary to the case reported by Dr. Langmaid, it was a considerable length of time in getting well. He had no special treatment outside of rest and constitutional remedies. The effusion lasted for several weeks. He had no hæmorrhage, either at that time or since. He has been under my care on several occasions since then, and, although he has had several attacks of acute laryngitis, there has been no recurrence of the hæmorrhagic effusion.

Dr. Langmaid: In closing, I should like to say that although I did not report observations made by others a number of references will be found at the end of my paper. I recall, however, a similar case reported by Dr. Douglass Grant, the particular points in which, as in the other cases, were that there was no hæmoptysis and there was no recurrence. I have seen no case of recurrence, and therefore I did not think it worth while to mention it.

The fact that a small hæmatoma was left in the place of the effusion seemed to me to be worthy of record for the light that it throws upon the origin of such growths. It would seem as if this condition must be much more frequent than is ordinarily supposed. A patient, who has been suffering with laryngitis, suddenly becomes hoarse and aphonic and may not consult a laryngologist at this time, but when he comes under observation later the hæmatoma is discovered. Another point I think worthy of remark is that the same observer should have seen these several cases of the same kind, having the same cause, and pursuing the same course; the observations having extended over several years. The fact that there was no hæmoptysis, that the condition was caused by some strain and on top of a laryngeal catarrh, and the fact also that they all recovered so quickly without treatment, except rest, seemed to me sufficient reason for bringing the subject before the association. I also feel that I was justified in reporting these cases in view of the fact that in the discussion there was so little comment upon them.

Hysterical Dysphagia.—A paper thus entitled was read by Dr. A. Coolidge, Jr., of Boston. (See page 280.)

Dr. Thomas Hubbard: There is one form of difficulty in swallowing which was not dwelt upon by the reader of the paper. It is where there exists sacculation or dilatation of the œsophagus, with intermittent spasmodic obstruction due to contraction of the muscle below the dilatation. This obstruction may be partly inflammatory and partly nervous in character. I have seen a case of this kind in which it was exceedingly difficult to say whether there was inflammation or merely disturbed coordination.

In the case of a colored woman that I had recently under my care it was observed that she had hysterical dysphagia after eating very freely of sweet potatoes. I have known this to occur in two cases. The other was an old lady, who nearly suffocated from eating hastily boiled sweet potatoes, which formed a slippery bolus which overdistended and paralyzed the œsophagus.

The history and course of the case first mentioned is, I believe, suggestive of the cause of many attacks of spasmodic stricture. Any one attempting to eat sweet potato hastily will soon become aware of a feeling of fatigue in the throat. Incoordination of the muscles of deglutition results, and a large bolus overdistending a section of the œsophagus, so that it can not contract, there is spasmodic stricture above and below which still further increases the overdistention, producing paresis of this section. So long as this weakness persists any attempts at deglutition excite spasmodic constriction.

Dr. John H. Lowman: Some of the cases of the kind reported by the lecturer are purely nervous. I remember the case of a child four years of age, in whom difficulty in swallowing had come on gradually. Her physician had used bougies, but with no benefit, and the difficulty in swallowing increased until she was unable to swallow anything. There was no history of any great emotion, but I remembered that the patient was a female, and this led me to think that it was a case of hysteria. I therefore made my examination as formal as I could. I darkened the room and impressed upon her that as soon as I was done she would be able to swallow as the result of the application which I would make to her throat. She was very much impressed with the proceedings, and a little frightened. I made an examination, and applied cocaine to the pharynx. Immediately afterward I had a piece of cake brought in to her on a plate and told her that she could swallow now, and that she was to eat it. This she did, and then went home and ate her dinner. It was undoubtedly a case of hysteria.

I may mention another case, which was not hysterical, and which went into the hands of a surgeon. It teaches a special lesson with regard to examinations with a bougie. A man came to me with difficulty in swallowing, and with some difficulty in breathing. From the symptoms, I thought that the difficulty was outside of the œsophagus and that it might be an aneurysm. I examined him, but I could not pass the sound, and concluded that the obstruction was due to pressure from the outside. The patient was sent to a surgeon, who passed a sound. He thought that it was a spasmodic stricture. He then told the man to go out and eat a little soft food, like eggs, which he did. Three or four days later the man died, and was found to have aneurysm of the aorta and a perforation of the œsophagus. I met the surgeon one evening, and I asked him if he had had any difficulty in passing the tube, as I could not do it. He said that his plan was to introduce the sound as far as he could, and, after waiting a few moments, he pushed it suddenly so as "to surprise the stricture." By so doing, as it happened, he had ruptured the œsophagus and produced the fatal result. This accident nearly occurred to Fraenkel. He was called to pass a sound for a patient, but he could not get there that night. When he came in the morning he was informed that the patient was dead; he had died of hæmorrhage from the rupture of an aortic aneurysm during the night. If Fraenkel had been able to get there at first, and he had passed the sound, he would have ruptured the aneurysm, with an immediately fatal result. The act of passing the tube, therefore, is not without danger. Gratz has reported three cases of death from simply passing the stomach tube. In one case that I know of myself, a stomach tube was passed into the stomach and the stomach washed out with warm alkaline solution. The man complained of feeling weak, and he was made to lie down, but he continued looking pale; stimulants were given, but he shortly afterward died. The mere passage of the bougie is, therefore, not without risk of a fatal result. The danger is so much less where an application of cocaine has been made before the passage of the bougie, and the reflex disturbances are so much reduced by cocaine that it seems that it should always be used previous to the passage of the tube.

Dr. J. W. Gleitsmann: If I understand the reader of the paper, he spoke only of that class of hysterical cases where there is no lesion. I have had a case which might belong to this group. It was in a little girl, from eight to ten years of age, who came to my office with the statement that she could not swallow any food. I made her swallow a little liquid, but nothing more. When examining her throat I found that she had a large lingual tonsil. It was not large enough to obstruct swallowing, but quite prominent. I cauterized it with nitrate of silver, not sufficiently to make any impression upon the growth, but simply in order to produce a mental effect. The next day she came back and said that she was able to swallow a little water, and after repeating the treatment she recovered entirely. I thought that this case was purely nervous in character. I saw another case in which the difficulty in swallowing came on in paroxysms, and was attended by muscular rigidity and by loss of consciousness, and I cured this one also by removing the lingual tonsil. I refer to these cases as I think that they really belong to this group which Dr. Coolidge has just brought before us in his paper, as there was no obstruction to swallowing.

Dr. H. L. Swain: I am glad that Dr. Gleitsmann has preceded me, and has anticipated my remarks upon this class of cases, as it emphasizes what I wish to say. The subject of enlarged lingual tonsil interests me very much, and I have paid especial attention to its study for a number of years. If nervous or hysterical symptoms may arise from reflex disturbances connected with enlarged faucial tonsils, it seems only reasonable to suppose that dysphagia might also be due to enlargement of the lingual tonsil. Therefore, in the last few years, in all these cases of nervous dysphagia that have come to me I have been accustomed to give my first attention to the lingual tonsil. Many of these patients can so accurately refer their trouble to its source that immediately upon making an application of the probang to certain red or swollen portions of the lingual tonsil, they will tell you that you have found the site of the trouble. By acting upon this, I have succeeded in relieving the patient by making applications to such sensitive points; and I have observed that by paying attention to these portions of the lingual tonsil the patients, as a rule, promptly improve.

I do not think that the reader of the paper laid too great stress upon the symptom of inability to take certain kinds of food, of which the patient complains, with the absence of any obstruction in the œsophagus, as indicative of the nervous character of the dysphagia.

I think that Dr. Lowman's remarks are valuable in a precautionary sense to all who have occasion to make examinations in cases of difficulty in swallowing. We certainly should be circumspect in our use of œsophageal sounds, on account of the bad results which have been occasionally reported during the past few years.

The subject of varicose enlargement of the vessels at the base of the tongue is also of interest in this connection, but the effects ascribed to this condition are usually those due to the existing enlargement of the lingual tonsil and not merely to the enlarged veins.

Dr. Samuel Johnston: In making our diagnosis in cases of dysphagia, we should not omit to examine the external auditory canal. Not long since, I had a case in which the symptoms simulated those of hysterical dysphagia; but when I removed impacted cerumen from the auditory canals the symptoms were entirely relieved.

Dr. Emil Mayer: I should like to call attention to the value of auscultation over the œsophagus in making the diagnosis between hysterical dysphagia and other conditions. I remember a case that occurred under my care some years ago, which I have reported, and which eventually turned out to be a case of congenital stricture of the œsophagus. In that case it was only with the aid of auscultation with the greatest care, while the patient was in the act of swallowing water, that we were able to decide upon the diagnosis of a stricture, as the fluids were found to be held in the œsophagus for a few seconds, and then were heard to trickle into the stomach. This subject was brought before this association some years ago by Dr. J. Solis-Cohen and Dr. Elsberg, whose communications will be found in the *Proceedings*. I think that auscultation should always be practised in cases of difficulty in swallowing, and the treatment based thereupon.

Dr. Delavan: The ætiology of hysterical dysphagia and of other similar neuroses of the pharynx generally depends upon the existence of some definite local lesion. This fact seems to be established, both upon theoretical grounds and as the result of clinical observation. It may not always be possible to recognize the lesion which is causing the trouble. On the other hand, there are cases where, after every possible method of discovering and treating definite lesions which seemed to be the cause of the neurosis have been adopted, and where the cause of the irritation to all appearance has been removed, the neurosis may continue to annoy the patient the same as ever. The full explanation of these matters may not have been reached, but it certainly seems to be in the direction suggested by the other speakers. Of course, I have been alluding to the simpler forms of dysphagia and not to those due to grave mediastinal conditions.

Dr. Farlow: A year ago I was consulted by a middle-aged gentleman, who had suffered for some time from pain in the throat on eating and speaking. While at table, or when talking or reading aloud, he would often have a paroxysm of pain in the throat, obliging him to hold perfectly still for some time. He had been treated for tonsillitis, as the tonsils were slightly enlarged, for malaria, and also for nervousness, but without benefit. I found no special trouble with the throat, but both ears were filled with very hard masses of cerumen. There was a painful gland under the jaw, and immediately after the removal of the wax the gland diminished in size and was no longer painful. All the symptoms disappeared, and he was able to eat and talk without any difficulty. I suppose that the impacted cerumen caused the sensitiveness of the gland, and the latter was pressed on by the movement of the muscles in speaking and eating.

Dr. S. W. Langmaid: There is one class of these cases which has interested me for many years. It is possible that the reader may have spoken of the condition to which I wish to refer, but he did not lay any stress upon it. These cases are all anæmic. The dysphagia is not intermittent, but constant, has existed for several years, and is caused, I think, by weakness of the swallowing muscles consequent to the anæmia. Upon examination of the throat, there is nothing to be seen, no hypertrophies, and nothing to note in the larynx except the anæmic condition. But it will be found that these patients have complained for many years of inability to swallow solids. They can get down liquid foods generally, but sometimes only with difficulty. Usually there is no history of hysteria. They generally belong to the class of working girls. I have seen a number of these from time to time, and have kept some of them under observation for fifteen or twenty years. If there had been any malignant growth, it would have shown itself. I have still some of these patients coming into my office, who have been coming for years, every few months, to have a bougie passed. With regard to the danger of the use of this instrument, I may say that the whole secret consists in passing the bougie carefully. I formerly used the *bougie à boule*, but thought that the abrupt constriction near the extremity allowed the olive point to hurt the patient. I then adopted the plain bougie, and used larger and larger sizes. I never knew any of these patients who did not experience benefit;

many of them have returned, from time to time, to have the operation repeated. They speak in the most matter-of-fact way about it, and say that they have come to have the bougie passed. When it is done, they are relieved for a long time—it may be one or two years. May I ask the reader of the paper if he mentioned this class of cases, and if he includes in the subject of his paper this class of cases?

Dr. Coolidge: Yes; such cases were included in the subject of my paper.

Dr. W. H. Daly, of Pittsburgh: I did not have the pleasure of hearing the paper, but the condition is one that demands more careful attention than we sometimes give it, and I feel myself just now derelict, for within a few days I have had a serious lesson in regard to hysterical dysphagia. A beautiful young girl was about ten days ago admitted to the Western Pennsylvania Hospital as a private patient. She had been under the care of one of our best physicians for laryngitis, and, owing to her persistent refusal to swallow solids, had been entirely nourished on cream and beef tea.

When I examined her on her admission to the hospital, there was an entire cure of the laryngitis, and, though prostrated, a careful examination of all her organs revealed no organic disease, and notwithstanding there was no œsophageal obstruction whatever, as revealed by the bougie, there was always a voluntary rejection of solids after one or two hysterical attempts at deglutition. Solely for the purpose of getting the girl to do better, I reprimanded her for her apparently foolish and hysterical behavior, and in the presence of two of her sisters intimated to her that she was not very ill, but if she persisted she might in the end make herself seriously ill.

I suspected the girl had some love affair that was preying on her mind, and she did not deny this. I was called away from town for a few days, and upon my return was informed the girl had died during my absence. No post-mortem was permitted.

I was naturally shocked to learn of her death, and regretted having reprimanded the girl in the presence of two members of her own family, the hospital nurses, and internes, but I acted conscientiously for the purpose of endeavoring to get her to pull herself together and try to get well, instead of carrying on in what seemed the most varied and determined hysterical attempts to die.

This case shows us that a patient must first of all be ill before she can have hysteria, and if she has that, our solicitude should be aroused to guard the patient's life as well as restore her to health. There must in this case have been some grave disorder of the nerves of organic life. The cause of death was mentioned as heart disease, by the internes and my colleagues, but there was no evidence of organic disease of that organ or any other organ that I could discover in a prolonged and careful examination. This case teaches a severe lesson, and one to be regarded. It teaches us to treat with a great deal of care a supposed hysterical patient and to be guarded what we do and say.

I have always advised the complete rest cure in these cases, with entire isolation—often a difficult thing to obtain, since the patients insist on being allowed to make an exhibition of themselves to their friends, for motives of sympathy. If they resist proper nourishment by the mouth, I feed them through the tube introduced into the stomach by way of the nares. Six or eight weeks' rest cure will start them on the way to health surely.

Dr. Coolidge: Dysphagia can not be considered hysterical if it is due to a reflex from some local lesion. But where some slight local lesion or obstruction is magnified by the imagination of the patient there may be dysphagia, which is not simply reflex, but due to central weakness or hysteria. And the dysphagia may persist after the original source of irritation has passed away. With regard to the lingual tonsil, I think that it is a very frequent cause of reflex disturbance in the throat. A cough of doubtful origin can often be relieved by attacking it, and I have no doubt that hysterical dysphagia would be also. But in many cases I believe that it is the operation *per se*, or counter-irritation, which benefits, and that the same result could be obtained by electricity or by passing bougies, or other local manipulation. Impacted cerumen frequently causes cough and pharyngeal discomfort—it might well cause dysphagia. I can not agree that dysphagia is always due to some reflex irritation. It may be purely mental, the result of hysteria or hypochondriasis. There are two important points emphasized by cases reported in the discussion. Do not be too ready to rule out a serious unsuspected cause. Be careful in passing stiff and unyielding œsophageal instruments, which may injure the œsophagus or start hæmorrhage from malignant granulations.

(To be continued.)

Book Notices.

Lectures on Pharmacology for Practitioners and Students. By Dr. C. Binz, Director of the Pharmacological Institute in the University of Bonn, etc. Translated from the Second German Edition by Peter W. Latham, M. A., M. D., Fellow and Late Senior Censor of the Royal College of Physicians, London, etc. Volume II. London: The New Sydenham Society, 1897. Pp. 451.

Our readers will perhaps recall the very favorable opinion which we expressed of the first volume of this work, and, if they have had the opportunity to consult that volume, we venture to believe that they have shared our enthusiasm. In the second and concluding volume, too, they will find both profit and pleasure, and the latter, we need scarcely point out, is rarely an attribute of books upon pharmacology. It is not that there are lacking many excellent works upon the subject; far from it, the number of those in the English language is very great, but among them all we find the tendency far more toward exhaustiveness and completeness than toward the arousing and the maintaining of interest in the mind of the reader. Regarded from this standpoint of minuteness, therefore, it may appear that Binz has sacrificed something of importance in the presentation of the subjects, and we incline to the view that this is so; but, if the book is lacking in this respect, there are by that very lack a smoothness and an easily legible quality to the work which the much betabled and beformularized works can never possess. Clearly, however, this work of Professor Binz's will be one which will appeal rather to the graduate in medicine than to the undergraduate, for the matter is scarcely presented in that grouped and classified and divided and subdivided way which alone seems adapted to the student's comprehension of a subject so vast, but a way which, unfortunately, is quite incompatible with literary charm. The therapeutist and the practitioner must necessarily value such a work, for it is one which is not to be purchased and laid aside for reference alone, but rather one to be read and enjoyed. So skillfully are facts presented and discussed, so frequent is the connection with historical and classical matters introduced, and so minimized are the hard, dry minutiæ of pharmacology, that one's comprehension is tricked into the assimilation of much pharmacological information almost as one enjoys the narrative. To say that these lectures are more for the older reader than for the younger may seem self-contradictory. No doubt the undergraduate would read them vastly to his advantage, but rather would he profit by hearing them delivered than by reading them.

We can not but regard this work as both admirable and exceptional, and we confidently believe that to the competent reader it will be a source both of pleasure and of gain.

Chirurgie des voies urinaires. Études cliniques. Par le Dr. E. Loumeau, Professeur libre de clinique des maladies des voies urinaires. 2me volume. Avec planches hors texte. Bordeaux: Feret et fils, 1897. Pp. 287.

In this readable collection of interesting and well-recorded clinical cases there will be found much that will interest the progressive genito-urinary surgeon.

The author's plan has been, as far as possible, to group together cases presenting certain identical or similar symptoms, but arising from different pathological conditions; then, by a careful analysis of all other signs and symptoms, to deduce if possible some data upon which a positive diagnosis can be based. The treatment of each case is then given in detail and the immediate and remote results are conscientiously recorded.

The author shows himself to be a careful observer, a logical diagnostician, and a skillful operator, but he shows an unpardonable lack of judgment in the treatment of grave cases of urethral stricture. It seems to us surprising and wholly incapable of explanation that the French school of genito-urinary surgeons, who in the past have contributed so much to this branch of medicine and whose achievements have been so brilliant in other directions, should have utterly failed to grasp or comprehend the principles which guide American and all other surgeons in the successful treatment of this condition. To divide a long-standing cicatricial impassable stricture in the deep urethra, requiring a suprapubic cystotomy and retrograde catheterism, only to No. 18 of the French scale, and then to close the perineal wound without drainage, seem only to invite speedy recontraction if the patient is fortunate enough to escape earlier and more serious consequences.

Such a case is recorded in the tenth chapter of this work. Recontraction occurred within fourteen days, requiring a second operation, this time an internal urethrotomy to No. 24 F. (also without perineal drainage, although the stricture was situated behind the bulbo-membranous junction). Chills, fever, prostration, and rapid recontraction followed, and in three weeks his condition was as bad as ever—no sound could be passed.

It is to be hoped that some progressive French surgeon will some time learn how to treat cases of this kind—will learn that it is only by thorough division, allowing of the subsequent use of full-sized sounds, that recontraction can be avoided, that perineal drainage is the only safe procedure in urethrotomies beyond the bulbo-membranous junction, and that the use of the *sonde à demeure* is a dangerous experiment.

We are happy to add that this is the only point upon which we could radically differ with the author in the treatment of his cases.

Some Aspects of Infantile Syphilis. Being the Hunterian Lectures delivered at the Royal College of Surgeons in 1896. By J. A. Coutts, M. B. (Cantab.), M. R. C. P., Physician to the East London Hospital for Children, etc. London: Rivington, Percival, & Co., 1897. Pp. 130. [Price, 3*s*. 6*d*.]

Upon perhaps no other medical subject of like importance has the average practitioner so little definite knowledge as upon the many questions involved in the subject of infantile syphilis.

In his little volume on this subject the author has given to the profession an excellent *résumé* of the facts which have been established, together with a consideration of the many theories which have been formulated; and from these he draws conclusions which are both logical and satisfactory. The book may be read with much profit by any one whose ideas upon this most important subject are confused or uncertain.

Illustrated Skin Diseases. An Atlas and Text-book. With Special Reference to Modern Diagnosis and the Most Approved Methods of Treatment. By William S. Gottheil, M. D., Professor of Skin and Skin Diseases at the New York School of Clinical Medicine, etc. Portfolios IV, V, and VI. New York: E. B. Treat, 1897. Pp. 85 to 156. [Price, each part, $1.]

We regret that we can not commend these portfolios. In several respects the text is defective, and most of the colored plates seem to have been produced by a process which is still in great need of improvement, unless a jumble of iridescence and inky darkness is considered as sufficiently portraying pathological conditions of the skin.

As regards the shortcomings of the text, in this work purporting to have been prepared "with special reference to modern diagnosis," the first thing that strikes us is the utterly inadequate attention given to pityriasis rosea, a disease of which one of the most recent of American dermatological text-book writers says: "Though Gibert described pityriasis rosea as early as 1868, the disease is but little known in this country, not because it does not occur, but because it is not recognized." Dr. Gottheil says that pityriasis rosea "is in all probability a general form of ringworm of the body," and practically this is all he says of a disease that often eludes diagnosis.

Erythema multiforme and dermatitis herpetiformis, too, receive but scant attention. However, the author shows some familiarity with the latter disease, at least with one of its ridiculous French names, though even in this he is not accurate, for he has left out the word *chronique*, and substituted for it another one that he perhaps thinks more to the point. It should read, in its verbose descriptive entirety, "*dermatite polymorphe douloureuse chronique à poussées successives.*"

Brocq, however, who is responsible for this horrible compound, merely gives it in parenthesis, and describes the disease in his book under the title given to it by Duhring himself.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XI. Diseases of the Nervous System. New York: William Wood and Company, 1897. Pp. v–3 to 962.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D., Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. Mitchell Bruce, M. D., F. R. C. P., London, England, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume II. Seventh Series. Philadelphia: J. B. Lippincott Company, 1897. Pp. xii–371.

Crime and Criminals. By J. Sanderson Christison, M. D., formerly of the New York City Asylums for the Insane, Blackwell's Island and Ward's Island, etc. Chicago: The W. T. Keener Company, 1897. Pp. 3 to 117. [Price, $1.]

Les artérites et les scléroses. Par A. Brault, Médecin de l'Hôpital Tenon, etc. Paris: Masson et Cie., 1897. Pp. 5 to 166. [Prix, 3 fr.] [Encyclopédie scientifique des aide-mémoire.]

Lehrbuch der physiologischen Chemie mit Berücksichtigung der pathologischen Verhältnisse. Für Studirende und Aerzte. Von Richard Neumeister, Dr. med. et phil., a. o. Professor der physiologischen Chemie an der Universität Jena. Zweite, vielfach vermehrte und theilweise umgearbeitete Auflage. Mit 1 lithographischen Tafel. Jena: Gustav Fischer, 1897. Pp. xviii–927. [Preis, 19 Marks, 50 Pfennigs.]

Bibliographischer Semesterbericht. Der Erscheinungen auf dem Gebiete der Neurologie und Psychiatrie. Von Dr. med. et phil. G. Buschan. Zweiter Jahrgang, 1896. Zweite Hälfte. Jena: Gustav Fischer, 1897. Pp. 157 to 344. [Preis, 4 Marks, 40 Pfennigs.]

Transactions of the Association of American Physicians. Twelfth Session, held in Washington, May 4, 5, and 6, 1897. Volume XII.

Transactions of the Medical Society of the State of New York, for the Year 1897.

First Annual Report of the State Board of Medical Registration and Examination of Ohio, 1896.

The Position or Posture of the Patient during Parturition, with Special Reference to the Merits of the Walcher Position. By Andrew F. Currier, M. D. [Reprinted from the *Medical News.*]

Ventral Hernia resulting after Abdominal Section, and its Treatment. By Andrew F. Currier, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

The Prognosis and Treatment of Acute General Peritonitis. By Robert Abbe. [Reprinted from the *Medical News.*]

The Appendix "in the Interval." A New Method of Studying its Pathology. By Robert Abbe, M. D. [Reprinted from the *Medical Record.*]

Miscellany.

The Nose as an Organ of Vision.—The following curious case is related by Donliot in the *Revue médicale* for August 4th: The patient was a countryman who had lost the right eye while still a child. Some years afterward, while climbing a cherry tree, he fell and his face struck a sharp stick which projected from a bush. The shock was so violent that the nose, the cheek, and the left eye with the two eyelids and the eyebrow were horribly mutilated. The surgeon who attended the patient thought that the eyeball had been completely torn away and must have adhered to the stick.

A year later, after the wounds had healed, the man noticed one day that he could distinguish the daylight and the color of flowers through his nose. From this time, for five or six years, he saw with his nose, which had become the organ of vision. He eventually became able to distinguish all objects if they were placed below him, for he was insensible to all light which came from above.

The organs which were injured at the time included the eyebrow and the nose, consequently the blow could not have been made in the direction of the axis of the eye, but very obliquely. If, then, the humors of the eye were discharged on the outside, and if, at the same time, the lower wall of the orbit was pierced, the membranes, particularly the retina, had been preserved in the depth of the eye, says the writer. When all the wounds had healed and the eyelids had closed over the ocular cavity, there must have remained in the bony case a small opening which put this cavity in communication with the nasal fossæ. Thus the case of this man, which, says the author, is truly remarkable, admits of a rational application. It serves as an experimental proof of the theory by which the retina is compared to the screen in the dark room of physicists, in which the images of exterior objects are formed, even in the absence of all refracting means, provided the luminous rays can not reach it until after having passed through a very narrow opening.

A Case of Obsession.—At a recent meeting of the Lyons Société nationale de médecine, a report of which appears in the *Lyon médical* for July 25th, M. Lépine made the following communication: The patient, a woman thirty years old, whose ancestors had been neuropathies, heard incessantly for several weeks a series of words, twenty-five in number, which followed each other regularly and uniformly without presenting any apparent sense. These words were: *Pierre, Jacques, petite folle, je monte, je descends, épicerie,* etc. The victim of this hallucination was not insane at the time, for she knew perfectly well that the words were not spoken. A singular thing in this case was that the patient heard the words in the left cheek and not in the ear, and in that cheek there existed a neuralgic spot.

The origin of this obsession was singular. The patient had lost some money in the village of Cannes, and from that time she had incessantly heard the word Cannes; then dreams followed in which she saw children named Pierre and Jacques, then a grocery. Afterward she began to hear the names of these children and of the objects and the scenes which she saw in her dreams.

M. Lépine had made many attempts to cure her, but had succeeded only in obtaining an amelioration. Suggestion alone had been altogether powerless. The author thought he should obtain more favorable results if he employed suggestion after the patient awakened from anæsthesia, and, in fact, he had thus procured a very notable diminution of the obsession.

M. Lépine had also seen another patient who was hysterical and mentally unsound. On different occasions she had spoken a name many times without being able to stop herself. She had, to a great extent, the sensation of globus hystericus, and she had motor impulses. For instance, one day, while about to go on board a boat, she left the dock and took a train without being able to resist the impulse.

Vasol and Iodovasol.—According to a writer in the *Pharmaceutische Zeitung*, 1897, and the *Répertoire de pharmacie*, 1897 (*Journal de médecine de Paris*, July 4th), vasol is a product which is analogous to vasogen and to other products which are said to be capable of being used as bases in the preparation of ointments; these products do not undergo any alteration, and iodovasol has this same valuable quality. It is prepared in the following manner: An excess of oleic acid is treated with chloride of iodine, and an oleaginous substance is obtained; this is first subjected to the action of water, then to that of a solution of sodium hyposulphite, then again to that of water. Finally, the water is completely separated by shaking up with sodium sulphate which has been dehydrated by calcination; the dry isolated product is mixed in a given proportion with yellow vaseline and a little absolute alcohol, then subjected to a current of ammonia gas, which saturates the oleic acid. In this way a clear brown liquid is obtained which contains seven per cent. of iodine and has a weak odor of ammonia. When it is shaken with two parts of water it forms a white emulsion which lasts for an hour. Iodovasol becomes solidified by cold and returns to its liquid condition at an ordinary temperature. When it is heated it sets free its ammonia and loses its emulsive properties, but regains them by fresh saturation with ammonia gas. The preservation of iodovasol requires the absence of all moisture; this may easily be fulfilled, for the product is not hygroscopic. It suffices to employ well-dried and well-corked bottles.

The Value of Arsenic and Belladonna in the Treatment of Chorea.—In the *Lancet* for July 31st Dr. Walker Overend states that he has had an opportunity of testing the value of arsenic and belladonna in the treatment of chorea in twenty-five cases, the results of which he summarizes as follows: The observation of the cases here mentioned gives the impression that large doses of arsenic have a beneficial influence in subduing the movements, and this is best seen after the movements have existed for some time—weeks or months—that is, when a cure seems almost hopeless. The drug should be given after food, and the little patient should lie down for half an hour afterward in order to avoid retching and nausea.

In regard to belladonna, Dr. Overend states that Dr. Fuller gave large doses of the drug in twelve cases (*Medical Times*, July 1, 1859). One girl, ten years old, received seventy grains of the extract daily, the average dose for an adult being half a grain. She took a thousand grains in twenty-six days. Another took thirty-seven grains of atropine in eighteen days, the average dose for an adult being a fiftieth of a grain. During the administration neither fever, rash, nor erythema was noted. The pulse became quick and the urine scanty. Only in two instances was indistinctness of vision observed; four suffered from sickness and diarrhœa. There was no dryness of the throat, no headache, and no delirium. In two patients the belladonna was useless; in the remainder its efficacy was noteworthy. The drug was readily absorbed from the stomach and passed out in the urine, from which it could be extracted. The phenomena of chorea, Dr. Overend says, appear to be due to a nutritive and functional disturbance or ataxia of the higher nerve centres. Post mortem, a general tendency to dilatation of the smaller arteries within the substance of the brain accompanied with exudation is observed. This appears more especially in the corpus striatum and the regions supplied by the middle cerebral arteries; in other words, there is pronounced hyperæmia of these nerve centres. It is probable that the chief stress falls upon the Rolandic areas. Such vasomotor ataxia might be induced by reflex disturbances arising within the digestive tract, by uterine irregularities, or by emotional disturbances. In the rheumatic diathesis the toxine may attack the motor centres directly.

In conclusion, he says: 1. Belladonna appears to be most beneficial in recent cases, and its influence is sometimes very marked in severer forms. 2. In obviously rheumatic cases arsenic in large doses may be given a trial or may be combined with belladonna from the first. Belladonna may act by diminishing the excitability of the nerve centres or by imparting an improved tone to their vascular supply. 3. In the wards of a hospital it is perfectly justifiable to give to a child as much as thirty minims or more of tincture of belladonna every four hours for ten days or even longer. Certain precautions are necessary. The patient should be kept in bed and the urine should be daily measured. Small doses of potassium acetate may be added if it becomes much diminished or if the eyelids show any puffiness. In one child nocturnal incontinence occurred, and the dose was lessened. The occurrence of the papular erythema, which leaves raised circular lumps for a time, does not demand any diminution of the dose. Dryness of the throat and swelling of the parotids, should they occur, are merely temporary. The influence of the belladonna makes itself felt after about four days. Should no visible improvement occur before the tenth day it would be useless to continue with it. But in all the eight severe cases already referred to belladonna was of benefit, and is certainly worthy of further trial. As soon as the movements become trivial or occur only during exertion it is better to omit the belladonna, to begin massage of the affected muscles, and to administer cod-liver oil and syrup of phosphate of iron or other tonics. The use of arsenic may be continued for a week or longer.

Deep-tissue Traumatism from Röntgen-ray Exposure.—In an article on this subject in the *British Medical Journal* for July 31st Dr. David Walsh remarks that it seems to him that the method of Röntgen-ray diagnosis may exert a definite harmful action upon some of the deeper tissues of the human body, and he cites the following cases in support of his opinion:

Professor Waymouth Reid, of Dundee, experienced a severe dermatitis and loss of hair after four exposures, from twenty to forty minutes each, within a period of four days. The focus tube was placed over the front of the body, and on the evening of each exposure marked erythema of the chest and belly was noticed, as well as slight redness of the back. This interesting observation seems to point to a kind of selective action traumatism of the deeper epidermis and dermis by rays capable of passing through the substance of the body.

Another instance was given by Mr. Gilchrist in the *Johns Hopkins Hospital Bulletin* for February, 1897: It was that of a demonstrator, aged thirty-two years, affected by a severe dermatitis after frequent and prolonged exposures. At the same time the bones of the hand became tender on pressure. A skiagraph showed the presence of a distinct osteoplastic periostitis, and probably an osteitis of the first and second phalanges of the index and second fingers, and also of the heads of the corresponding metacarpal bones.

A remarkable instance of apparent injury to brain structures by the rays of the focus tube is the following: The sufferer, a man forty-nine years of age, had demonstrated the rays for some months, and had suffered from several slight attacks of dermatitis. At length he experienced a severe illness after a week's prolonged demonstration, during which the tube was constantly near his head, although separated by a wooden screen. The main features of his attack were giddiness, slight headache, vomiting, diarrhœa, high temperature, and prostration. He was under the care of Dr. Murray, of Clacton-upon-Sea, who furnished the following note: When the patient came under observation his temperature was 103.5° F., pupils sluggish, frequent diarrhœa and vomiting, great languor and debility. Dr. Murray regarded the attack as in some way due to Röntgen-ray exposure, and compared it at the time with the symptoms of sunstroke. The giddiness persisted for two months. On the whole, the facts of this illness appear to be consistent with a theory of gastric and cerebral irritation set up by focus-tube exposure in a subject proved to be susceptible by previous dermatitis from a similar cause.

The following case also came under the author's notice: A practical worker was carrying out a series of experiments involving exposure of the region of the stomach for a period of about two hours daily. After some weeks he complained of gastric symptoms, such as pain, tenderness on pressure, flatulency, colic, and diarrhœa. He went away into the country for a fortnight and got well. On his return he resumed his experiments, and after a fortnight experienced a similar attack. He subsequently shielded his stomach with a thin sheet of lead, and his symptoms finally disappeared. This history certainly suggests that in his case the rays of the focus tube caused a direct inflammation of the gastro-intestinal mucous membranes.

Other facts pointing to deep action of the focus tube rays are the local tremors often set up by exposure, and the apparent shrinking of the heart noticed in several instances by Dr. Bezly Thorne. Lastly, there is the action, noted by Despeigne and others, of these rays in the relief of the pain of cancer.

If, says Dr. Walsh, from the foregoing it may be assumed that focus-tube traumatism of the deeper structures of the human body occurs, then we have at once a remarkable analogy with the results of exposure to the sun. Severe resulting rashes are common to both agencies, and may follow a single exposure. Pigmentation of skin is another common effect. In the case above mentioned Despeigne used the rays to relieve the pain of cancer; he reported that after the eightieth sitting the skin of the patient's neck became as black as that of a negro. Then in the case of Dr. Murray there is a perfect mimicry of mild heat apoplexy. So far as any ill effect of the sun on gastro-intestinal mucous membranes is concerned, the author states that he knows of no direct evidence; on the other hand, however, obstinate constipation is the rule, together with what is usually regarded as cerebral vomiting. From the inherent conditions of the exposure, the brunt of the sun's rays would naturally fall upon the head, and it is commonly supposed by anatomists that the thickness of the negro skull is an acquired character due to prolonged exposure to the rays of a tropical sun. We know that sunlight has a powerful influence upon the general health, and it seems quite possible, he says, that the sun may have a much greater and more direct effect upon the deeper structures of the human body than has been hitherto imagined.

Gilchrist, continues the author, mentions three chief theories as the cause of focus-tube dermatitis:

1. Professor E. Thompson thinks that the injury is caused by the x rays, or by something that constantly accompanies them. He himself was skeptical as to the traumatism, and exposed his own hand at a distance of a few inches to a Crookes's tube, an experiment which resulted in a severe dermatitis.

2. Tesla maintains the effect to be due to ozone liberated in the surface tissues. His theory, however, is upset if we accept the existence of focus-tube traumatism of the deeper structures, where ozone is not generated.

3. Gilchrist fancies the result to be due to actual particles of platinum carried by the cathode rays. If so, they must have been carried through a board in Dr. Murray's case.

Dr. Walsh is inclined to think that the focus-tube traumatism may ultimately prove to be due to heat rays, in other words, to be a kind of burn. The cathode rays strike the platinum anode or anti-cathode and make it hot; there they are in part converted into Röntgen rays. What becomes of the rest of the cathode rays is not quite known, he says, but it is generally believed that some of them, at any rate, are converted into heat rays, by which means a tube in action becomes warm.

This theory, Dr. Walsh says, was suggested to him by the following cases which were brought to his notice by Mr. Webster, of Blackheath, who has had considerable experience in Röntgen-ray work: In the first instance he exposed an individual something like a score of times during a period of six months. Six weeks after the last exposure the hair fell out from one side of the head. The only differing condition of experiment, so far as could be ascertained, in the last exposure was that the cathode end of the Crookes's tube had been kept continually heated.

The other case was that of Mr. Webster himself. For a year or more he had undergone constant exposure to the rays without bad results. He then injured himself with a metal developing solution, and shortly afterward a diffuse dermatitis appeared on the back of his hand. This traumatism, again, coincided with the heating of the cathode end of the tube.

Now, continues the author, in both these instances previously insusceptible persons became susceptible under altered conditions of experiment. The alteration consisted in heating the cathode end of the tube, which means, when applied to a Crookes's tube in action, an increased production of cathodal rays which are, as already stated, in part converted into heat rays. There is therefore some probability that in heating the cathodal end of the tube we increase the resulting heat rays thrown off from the tube. Lastly, the cathode rays strike the platinum anode or anti-cathode and render it red hot, and it is not unreasonable to suppose that their contact with the skin surface might also have a calorific effect. The identity, however, of the actual damaging factor to the living human tissues is still unascertained. It may possibly prove to be a non-luminous ray common to sunshine and to the rays emitted from a focus tube. In both sun and focus-tube traumatism individual predisposition plays a vital part. Whatever the real nature of the irritant ray, it is obvious, says Dr. Walsh, that the subject is pregnant with future possibilities as it is instinct with present interest.

Balsam of Peru in the Treatment of Scabies.—In the treatment of this affection, says a writer in the *Écho médical du Nord* for July 18th, balsam of Peru is capable of rendering very great service. Various experiments have shown that the balsam kills the itch mites and their eggs within forty minutes.

Concerning its action, Jullien seems to think that the cinnamein, which, according to Frémy, is the essential part, the only constituent even of the balsam, kills the parasites by asphyxia at a distance, and at the same time by a sort of corrosive action, and not by simple imbibition, as Hebra had seen them live for seven days in water at a temperature of 86° F.

According to Burchardt, the balsam, to be efficacious, must be put in direct contact with the acari. This does not imply that friction is indispensable in this treatment, for the balsam easily impregnates the tissues and softens the skin in such a manner that a moderately stiff brush will be sufficient to insure the necessary contact. Furthermore, somewhat vigorous friction, which may certainly be necessary in persons with a thick skin, is absolutely unnecessary in those with a delicate skin, such as women and children. In them the adhesion of the balsam alone is sufficient, for, owing to its volatile properties, it easily penetrates the cuniculi.

Various authors are of one accord regarding the mode of application, that is, painting the skin attacked by the acari. Opinions differ only regarding the soapy baths and lotions which are to be employed previously; some authors judge them necessary, others as absolutely useless. The writer considers the following method the best: 1. Baths and lotions are unnecessary in persons whose skin is not only delicate, but in a sufficiently clean condition; in those, however, with a thick or dirty skin baths and vigorous friction with black soap are necessary. 2. Before the patient goes to bed a quantity of balsam, varying from four hundred and fifty to seven hundred and fifty grains, according to the intensity of the lesions, should be rubbed over the entire body, except the head, for about thirty or forty minutes. 3. On the following day a starch bath should be taken by persons in whom the pruritus persists, and a cleansing bath by those who feel no itching. The garments should be changed and disinfected. In cases in which the lesions persist, a second and even a third application of the balsam may be necessary, although this is rare.

Contrary to what is the case with the sulphur treatment, says the writer, the balsam treatment has no contraindications, and it is as efficacious a treatment of scabies as it is easy of application. It is rapid and sure in its action, and is non-irritant in itself and in its mode of employment. It is, moreover, a very simple method and all patients may easily make use of it themselves; the drug is moderate in price and has an agreeable odor which is very much appreciated by patients, and it does not stain the clothing irremediably.

The Decalcification of the Arteries; a New Treatment of Angina Pectoris.—In the chronic affections of the heart with more or less marked troubles of compensation, says Romme in the *Presse médicale* for July 17th, the physician ordinarily tries to facilitate the work of the cardiac muscle and to diminish the obstacles which, in the new conditions of circulation, it meets with in the accomplishment of its functions. The treatment instituted is about as follows: As complete a rest as is possible, or at least avoidance of all fatigue; a diet which does not overcharge the digestive tract or remotely affect the heart; saline purgatives, diuretics, digitalis, diuretin, strophanthus, etc. Above all, milk in large amounts, considered as an article of diet of the first rank and as the most excellent diuretic, is always prescribed for patients with heart disease. With some insignificant differences, with some variations in detail, this is the treatment which is prescribed almost without exception in cardiac troubles.

Against this uniformity of treatment, says the writer, and especially against the irrational employment of milk and a more or less lacteal diet in cardiac troubles, Rumpf makes a protest in an article published in the *Berliner klinische Wochenschrift* for March 29th and April 5th, in which he considers the affections of the heart which are dependent upon calcification of the arteries, arterial atheroma.

Starting with this theory, continues the writer, that the troubles which are observed in cases of heart disease depend upon the calcification of the arteries—and angina pectoris from calcification of the coronaries is a type—Rumpf asks how far it is rational to condemn these patients to a diet rich in lime, as milk is, and if, on the other hand, there is not some method by which a discharge of the lime may be provoked, and consequently a sort of decalcification of the arteries obtained. Such a method Rumpf seems to have found in a combination of medicinal and dietetic treatment from which milk is excluded. This attempt at pathogenic treatment of angina pectoris and, in a general manner, of cardiac troubles dependent upon atheroma of the blood-vessels is worthy of being taken into consideration, says the writer, and imparts to Rumpf's work a peculiarly original character.

Rumpf thinks that a means exists of increasing the elimination of lime in the fæcal matter or in the urine or in both at the same time. It has been shown, he says, that, by subcutaneous injection, calomel, corrosive sublimate, and iodide of mercury give rise to a considerable increase in the elimination of the salts of calcium. The same thing has been demonstrated with regard to lactic acid subcutaneously injected and with regard to potassium acetate and oxalic acid administered by the stomach. The majority of diuretics also give rise to an increase of the quantity of lime eliminated. It has been ascertained, too, that in cases of fasting the lime is eliminated in larger quantities than in cases in which an ordinary amount of food is taken. The writer thinks this is worthy of note, for it may be foreseen that if the diet is poor in lime, an abundant elimination of calcium salts may be obtained.

Rumpf himself has observed that if an individual is put upon a diet poor in lime, an abundant elimination of the lime is provoked in him if he takes at the same time a solution composed of the following:

Sodium carbonate.............. 150 grains;
Lactic acid, a sufficient quantity to saturate it.
Add
Lactic acid, } each............. 150 grains;
Syrup, }
Distilled water.................. 6 ounces.

This amount is to be taken during the day.

Experiments on several subjects, particularly on those with cardiac atheroma, have shown that under the influence of this solution, which acts at the same time as a diuretic, the quantity of lime eliminated is increased from fifty per cent. to fifty-two per cent. Rumpf therefore proposes a diet which is poor in lime, and he recommends the following for use every day: Meat, about eight ounces; bread, fish, potatoes, and apples, each, three ounces. The great advantage, he says, of this diet is that it contains ten times less the quantity of lime that a given quantity of milk does and three or four times less than the diets advocated by Hoffmann as substitutes for milk.

In this diet, Rumpf says, the potatoes may be replaced by fresh beans, cucumbers, or peas. He absolutely proscribes cheese, eggs, beets, cabbage, rice, and spinach, all of which are rich in lime. Distilled water, or else water boiled and cooled, is advised as a drink.

As an article in medicinal treatment Rumpf has employed this solution, which, contrary to what is true of all other diuretics and heart tonics, may be employed for a long time without the least inconvenience.

Both the dietetic and the medicinal treatment have been employed by Rumpf in twelve cases. In three of angina pectoris the success obtained was altogether remarkable. In these patients an exact estimate of the diet and of the excretions showed that they eliminated more lime than they had taken with their diet. Rumpf thinks that the good effects of this treatment are to be attributed to the decalcification of the coronaries.

The Treatment of Chronic Alcoholism with Strychnine.—Mercier, in the *Gazette hebdomadaire de médecine et de chirurgie* for May 16th (*Presse médicale*, July 24th), states that the favorable results obtained by many authors, notably by Schulianski, in the treatment of alcoholism with strychnine in confined drinkers, led Combemale to apply the same method to drinkers that could not be confined.

According to him, the principal indication for this treatment is found in cases of confirmed alcoholism without acute attacks. Such a condition is recognized in the existence of what the author calls the stigmata of alcoholism, that is, the trembling, the nightmares, the cutaneous hyperæsthesia, and the changes in character. Subcutaneous injections of strychnine in amounts of from 0.031 to 0.077 of a grain daily for fifteen successive days give the best results; under the influence of this treatment the patient regains his composure, and the appetite returns, which is one of the best proofs of the amelioration.

These favorable observations, the writer thinks, would seem to warrant the application of this treatment in all cases of alcoholism; this is not the case, however, for in fatty degeneration of the organs, which implies the death of their tissues, the strychnine treatment does not and can not produce any modification of the symptoms.

Injections of strychnine not only are useless in certain cases, but may constitute a danger. Strychnine being eliminated slowly by the urine, the saliva, and the bile implies that the organs are intact and prevent accumulation; also, cirrhosis of the liver and renal impermeability are two more great contraindications to the employment of this drug. Combemale cites the case of an alcoholic, who suffered from cirrhosis of the liver with ascites, in whom tetanic symptoms occurred after the fifth injection.

The uselessness and even the danger of the strychnine treatment, in well-established conditions, do not constitute, the writer thinks, an obstacle to the further employment of this method. On the contrary, the physician should make the most thorough investigations concerning its effects, and should not hesitate to make use of it in the presence of such exact indications obtained from clinical examination.

The Aerial Transmission of Typhoid Fever.—Investigations in this direction, says Germano (*Zeitschrift für Hygiene und Infectionskrankheiten*, 1897; *Presse médicale*, July 28, 1897) have been made in the following manner: A certain quantity of typhoid cultures in bouillon or agar were mixed either with the dust taken from the sick room, with fine sand, with earth, or with the fæcal matter of diarrhœa, all of these substances having been previously sterilized. Each mixture was then distributed in three Petri boxes, one of which was placed in a damp room; another was left air-tight on a table in the laboratory, and the third was also left on a table in the laboratory, but, in order to obtain more rapid desiccation, the mass was uniformly distributed on the walls of the box with a sterilized glass rod. At various intervals as much as would lodge on a platinum loop was taken from each receptacle and sown on a proper medium.

These experiments proved that, in the earth and the dust, under the influence of slow desiccation, as in the second box, or accelerated desiccation as in the third box, the typhoid bacillus ordinarily succumbed at the end of twenty-four hours, and that, occasionally only, it still gave cultures in bouillon after having been in the air-tight box for two or three days. In the fæcal matter, under the same conditions of desiccation, the life of the typhoid bacillus was much longer; on agar no cultures were obtained at the end of six days, but in bouillon the cultures could still be made at the end of twenty-five days. This difference is attributed by the author to the fact that it is very difficult to dry the typhoid bacillus in fæcal matter. He says that, in any case, if typhoid fever is to be transmitted by the air, the desiccation of the bacilli in the fæcal matter would have to be such that they would no longer be alive.

In another series of experiments the cultures were deposited on pieces of cloth and linen. In these conditions, in spite of the progressive desiccation in the boxes, the typhoid bacilli still preserved their vitality at the end of sixty days and sometimes even longer. The author explained this fact by saying that the fibres of the tissues protected the bacilli against desiccation.

From all these experiments the author concludes that the doctrine of the transmission of typhoid fever by the air is scarcely admissible. In order that the air may carry particles to which the bacilli adhere, it is necessary that they should be found in a condition of desiccation which is scarcely compatible with the vitality of the bacillus. On the other hand, the danger of transmission by objects, such as clothing, wood, etc., soiled by the dejecta is very real.

The Specific Action of Quinine in Malarial Disease.—Dr. E. C. Register, editor of the *Charlotte Medical Journal*, recently read a paper with this title before the North Carolina Medical Society (*St. Louis Medical Era*). After many years of study, both clinical and microscopical, he has arrived at the following conclusions in reference to the specific action of quinine in the continued forms of malarial fever: A malarial fever without complications will subside after the plasmodia disappear from the blood; we have in quinine the means of completely eradicating malarial poison from the body; malarial fever occurring in a previously healthy subject, and in the central United States, if at once recognized and properly treated, never ends in death; it is speedily curable and never continues, provided the nature of the disease is recognized and appropriate treatment employed.

Dr. Register has made microscopical examinations of the blood of several hundred patients suffering with remittent malarial fever, and has studied closely and thoroughly the crescentic and ring-shaped bodies which he says are the forms of the parasite which are responsible for the continued types of this fever, and he finds that the reason quinine does not always affect these irregular forms of the poison lies in defects in its administration. He contends that the drug is very imperfectly absorbed when given by the stomach and when the patient has a temperature of over 102° F. He says that in cases of continued malarial fever, if distinct and well-marked intermissions of the fever are produced artificially by the use of antipyrine, acetanilide, and phenacetine, the crescentic and ring-shaped bodies will disappear after the administration of quinine as quickly as the spherical bodies that are found in ordinary intermittent fever. In reference to the belief that the forms of the parasite that inhabit the blood cells are not acted on by quinine, he has no doubt that this belief is erroneous. Besides his own observations, he has been able to collect the opinions of thirty-two authors touching upon this point, and twenty-eight out of the thirty-two believe that the intracorpuscular forms are not, on this account, the cause of an uncontrollable fever, and that proximity of the parasite to the blood cell does not in any way protect it from the action of quinine.

The Late Dr. John J. H. Love.—The following minute was adopted at a meeting of the visiting staff of the Mountain Side Hospital held on August 16th, in reference to the death of Dr. Love:

No words can express the loss which the Mountain Side Hospital has sustained in the death of Dr. Love, nor is it possible to so construe language as to give the measure of our personal loss in the death of our beloved leader.

Filled with the courage and self-sacrifice that are born of high purpose and unselfish broadmindedness, and always willing to prefer the well-being of others to his own, he gave freely of his time and substance to the hospital.

Its good name was as dear to him as his personal honor, and from his clear and comprehensive mind came most of the suggestions by the adoption of which the enterprise has been successfully carried on. Without Dr. Love it would have failed; with him it has achieved an enviable measure of success and usefulness.

We can no longer enjoy his friendship, his guidance, his counsel, or his sympathy, but we have the brilliant example of his noble life and of his devotion to the best interests of this hospital.

[Signed.] Richard C. Newton,
E. M. Ward,
H. B. Whitehorne, } *Committee.*

Practical Notes on Thiol.—Wirz, of Kaisersesch (*Deutsche medicinische Wochenschrift*, July 1, 1897), says that for a year past he has employed thiol in place of ichthyol in many cases, and has had ample opportunity to convince himself of its excellent qualities. As a substitute for ichthyol it seems especially welcome when used on the face, as it is odorless. Patients who could not bear the smell of ichthyol improved under the use of thiol. In inflamed conditions the analgetic properties of thiol surprised him. It can be used, he says, in inflammations of every description. Infiltrations are resorbed without the formation of pus, making incision unnecessary. In severe carbuncles, after removal of the pus, thiol allayed inflammation when applied around the wound on the infiltrated parts and pain ceased entirely. This was observed in all inflammatory processes where thiol was used after the removal of the pus. Lymphangeitis, even phlegmons caused by panaritium, insect bite, and other causes, quickly disappeared under thiol treatment. Inflammation of the face caused by decayed teeth, erysipelatous infiltration of the scalp and face, and severe infiltration of the neck which took on a serious aspect owing to œdema of the glottis gradually disappeared under constant application of thiol. In a case of general furunculosis in a child, he directed painting thiol over every furuncle, and soon a complete cure resulted. The best results, he says, are obtained with liquid thiol as supplied by the manufacturers, not by that prepared from powdered thiol with the addition of water. In five cases of parametritis he has had good results with plugs soaked in thiol and distilled water, equal parts. He also ordered applications of thiol on the abdomen during the night. During the day hot linseed poultices were used. In a severe case of parametritis and perimetritis accompanied by great abdominal pain, high temperature, and rapid pulse (130) he had better results with ichthyol, as applications of thiol did not completely allay the pain, while ichthyol induced complete recovery. Cases of otitis externa he has treated with thiol plugs with complete success. No other remedy has rendered him such good service against severe pains in the back after influenza. Patients experienced lasting relief by rubbing thiol over the whole vertebral column. Patients with emphysema accompanied by marked dyspnœa were relieved as soon as thiol was rubbed on the chest. Pains in the muscles of the thorax ceased, expectoration became easy, and dyspnœa and catarrh improved. In pleuritis exsuditiva as well as pneumonia crouposa thiol was of great service, either alone or together with veratrine and potassium-iodide ointment, against pain in the chest. Several patients said that this ointment benefited their condition more than caffeine, camphor, hæmatogen, etc. Wirz has come to the conclusion, therefore, that we possess in thiol an agreeable substitute for ichthyol, odorless, cheap, and efficient.

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SPORADIC CRETINISM,

AND ITS DISTINCTION FROM FORMS OF IDIOCY AND OTHER DISEASES.

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ASSISTANT ATTENDING PHYSICIAN TO THE MOUNT SINAI HOSPITAL
(CHILDREN'S WARD).

The study of sporadic cretinism in this country received its impetus during the last few years from the writings of William Osler, who in 1893 published the first systematic analysis of the disease as we find it in America. The history of sporadic cretinism in America before this brochure appeared was confined to a few scattered cases published at intervals of years in the journals. Preceding the publication of the original three cases of Osler we find that A. Jacobi presented in his clinic on diseases of children a cretin eight years of age, with some data as to the history of the case. This is the first case published in America of cretinism emanating from a leading clinician. Moreover, it would seem that all statements preceding this publication of the occurrence of endemic or sporadic cretinism in America are unreliable. Immediately preceding the publication of Osler's cases we find two authentic cases of sporadic cretinism recorded by Lloyd in the international clinics, and one case of congenital cretinism, published by Townsend, of Boston. Following the publication of Osler's paper, a number of scattered cases of sporadic cretinism appear in the recent literature. In addition to those published from other clinics in Osler's *résumé*, Rotch and Bullard, of Boston, Booker, of Baltimore, we have those of Northrup, Peterson, Noyes, Fruitnight, and Osgood Mason (1894). The author wishes also to state that in March, 1896, he presented two cases at the New York Academy of Medicine. If we turn to other countries we find that of late years the publication of cases of sporadic cretinism has increased also, and may be traced directly to the interest surrounding these cases as a direct result of the experimental work of Horsley and the clinical work of Reverdin, Simon, Kocher, and Ord. Within recent years we have cases published by Hillier (1893), Paterson (1893), Escherich (1894), Lebreton (1895), Sinkler Wood (1893), Ord (1893). Prior to 1871, we must be very cautious in accepting the publications on sporadic cretinism, for, while cases are published by Norris (1848) and Rees (1851), it would seem that the credit of clearly distinguishing the sporadic from the endemic forms of cretinism is awarded to C. Hilton Fagge (1871). This author not only published cases of sporadic cretinism, but sharply defined cases of cretinism with goître and those without goître, some of his cases being also idiotic. This it seems completes the historical *résumé* of sporadic cretinism. It will be seen that it is not so very extensive, though vast credit must be given to those who were the pioneer observers. Much confusion has arisen from the fact that sharply defined clinical pictures of sporadic cretinism are absent in many publications where forms of idiocy, etc., have been included under the head of cretinism.

Definition.—Sporadic cretinism occurs away from the centres of endemic cretinism and in countries where, as in America, endemic cretinism is unknown. Though Hirsch includes America as among the countries afflicted with endemic goître and cretinism, Osler has taken much pains to analyze these statements and finds them unsupported by facts.

Sporadic cretinism, or infantile or congenital myxœdema, should now also include those congenital cases formerly reported as congenital rickets. Horsley insists upon the classification of these cases as forms of sporadic cretinism, as does also Barlow. Sporadic cretinism may therefore be congenital or fœtal, or appear some time after birth. In fact, the vast majority of the cases thus far published seemed to be healthy infants at birth, and from healthy parents, and within the first year the symptoms of sporadic cretinism or infantile myxœdema have appeared. Therefore, though the clinical pictures of endemic and sporadic cretinism are similar, they are not identical. Though sporadic and endemic cretinism may eventually be proved to be due to the same infectious agents (Kocher), yet endemic cretinism is now regarded as an advanced stage of a degeneration beginning with goître manifestations and resulting in the production of disturbances due to athyreosis, whereas sporadic cretinism occurs independently of goître, and, in fact, in the cases thus far recorded, the thyreoid has been atrophied or not in a marked way changed pathologically.

Endemic cretinism has occurred in all the sections of continental Europe. Its first mention we find by Forest or Felix Plater in the sixteenth century. In the latter part of the eighteenth century Horace de Saussure, a traveler, described these unfortunates in the Alps. Following him, Ramond de Carbonier described the cretins of the Pyrenees. We then have the work of Fodère (1792), Wenzels, Joseph and Karl (1802), Iphofen (1804), Andrea (1814), Maffei Seizburg (1825), Hausler (1825), Wilke (1828), Troxler (1830–'36), Gross (1837), Demme (1840), Meyer (1845), Helferich (1847), Eulenberg and Marfels (1857).

It will thus be seen that cretinism has been endemic in Europe and has attracted attention as far back as the sixteenth century, but we find the first attempt to describe the disease from a pathological standpoint began with the work of Fodère, though Ackerman before him described the skull of the endemic cretin as a pronounced form of the rhachitic skull.

Fodère pointed out the connection between cretinism and goître, and insisted that cretinism was but an advanced stage of the goîtrous degeneration.

We must give to Virchow the great credit of having first studied the cretin skull. He showed that the peculiar form of the skull and expression of the endemic cretin physiognomy was due to a premature synthesis of the os basilare and the sphenoid, posticus and anticus. In this fact he seeks to find the principal cause of arrest of cerebral development in these unfortunates. Eulenberg and Marfels (1857) have confirmed these views of Virchow. Virchow describes the skull of the endemic cretin as for the most part of the brachycephalic type (short head). But we find endemic cretin skulls which include types of platycephalic skulls (flattened skulls), trochocephalic (round skull), and oxycephalic (pointed skull). In other words, the bony growth was the first element to engage the attention of the early observers of the endemic cretins; the long bones were found shortened, plump, thickened, and otherwise deformed, without distinct ossification zones, with the heads of the bones flattened similar to the changes found in rhachitis (Klebs). As a result of the premature synthesis of the bones of the skull, we find in the endemic cretin the root of the nose broad, the lower jaw prominent (prognathous); and this latter Virchow and Grawitz think a characteristic of the physiognomy of the typical cretin. The low forehead, prominent cheek bones, with large alæ nasæ, give the whole face an appearance similar to the physiognomy of the Eskimo. In addition, we have the broad and thick lower jaw, the short and thickened neck, the flattened chest, and prominent abdomen. The arms and legs are short, the muscles flabby, and the gait wabbling. The skin shows the appearances described by Charcot as the *cachexie pachydermique*—an intense anæmia in which we have a greenish hue given to the skin. The skin is wrinkled and like in old persons, thickened, as if œdematous, and the hair is short, dry, and coarse; the genitals for the most part are rudimentary. Most cretins of the endemic types are deaf, and can not talk but in a few monosyllabic terms, mostly grunts, cries, or howls. If they do talk, they find most difficulty in pronouncing consonants. There is no aptitude for learning the simplest things, and no logical responsibility. In some cases there seems to be an everlasting torpor, in which the material being will sit for hours oblivious of surroundings. We find the thyreoid next engaged the attention of observers of this disease.

The Thyreoid Gland.—Fodère first insisted that endemic cretinism was an advanced stage in a series of degenerations in which goître was the first manifestation. It was not until 1882 that J. Reverdin first noticed in extirpation of the thyreoid for goître the sequence of anæmia, œdema of the features, tumefaction of the eyelids, and feebleness of both physique and mind. The œdema and physical weakness much resemble those of Bright's disease. Kocher, of Bern, subsequently found, as also Wölfer, in looking over their cases of bilateral extirpation of the thyreoid, a condition exactly similar to that described by Reverdin; and Kocher gave this condition the name of cachexia strumipriva. It is a condition exactly identical with that found in the endemic cretin. The conclusion was at once inevitable that in those goîtrous subjects who were not the victims of cretinism there were still portions of the thyreoid gland which functionated and protected the individual from the cretinoid degeneration. Kocher gave to the peculiar state of the thyreoid gland which allowed the supervention of cretinism the term of "athyreosis." In his extirpations Kocher found that there supervened an anæmia of a progressive type, pains in the arms and legs, fatigue on the least exertion, reduction of body temperature giving rise to chilliness, slowness of speech, swelling of the hands and feet, with a peculiar dryness of the skin, and falling out of the hair. The anæmia progressed until the proportion of red to white cells was one in three hundred in eight months, and in one case the red blood-cells were reduced to 2,800,000. In individuals who were young, growth ceased. Kocher found that the thyreoid had a direct influence over growth of bone and blood formation.

Horsley, experimenting upon monkeys, found that he could produce a condition identical with cachexia strumipriva by extirpation of the thyreoid. This seemed to complete the connecting link between the functionating thyreoid and the condition known as endemic cretinism.

In looking back through the literature it was found that Sir W. W. Gull described a peculiar condition supervening in women, which he called the cretinoid state. One of his cases was a young girl, and one a woman of forty years. Ord redescribed a set of these cases and first gave to them the name of myxœdema. It was then seen that a form of cretinism could supervene in women and young people exactly similar to that of the cases of cachexia strumipriva independently of enlargement of the thyreoid, and these cases were concluded to belong to the same class as endemic cretins, the cretins operated on, or cachexia strumipriva, and due to the same cause—an athyreosis, an agent acting on the thyreoid, producing certain degenerations manifesting themselves either with a hypertrophy or atrophy of the thyreoid.

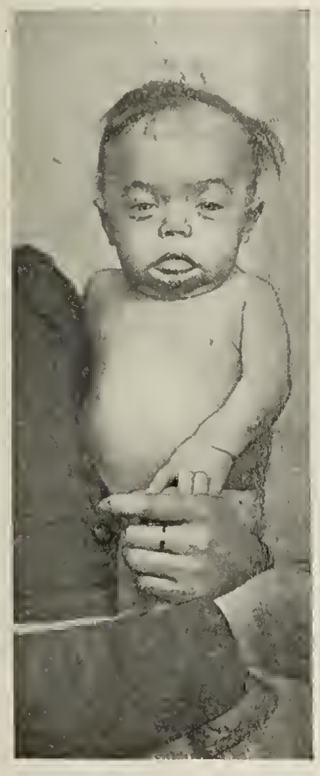
I have thus traced the early studies leading to the classification of sporadic cretinism among the cretinic or myxœdematous degenerations, and in 1887 the committee of the Clinical Society, London, classed infantile or congenital rickets or myxœdema, endemic cretinism and sporadic cretinism, under the same head as manifestations of the same influence acting on the functions of the thyreoid.

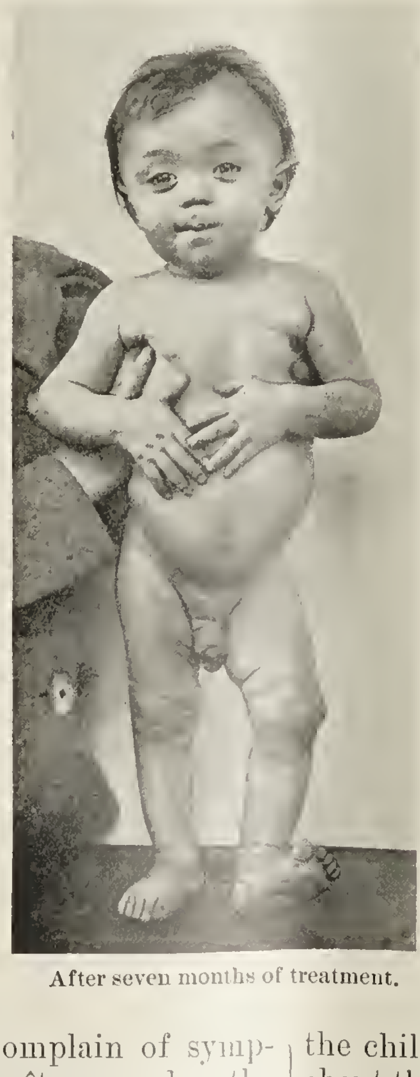
Sporadic Cretinism.—Hilton Fagge was the first to use the term sporadic cretinism, and by it we now understand a peculiar condition similar in many of its clinical features to endemic cretinism, supervening either *in utero* or some time after birth, and due probably to the same poison acting on the thyreoid and causing the myxœdematous or cretinic degeneration. There are some features of sporadic cretinism which are not found in the endemic form of the disease. For example, in the endemic form we have found the synthesis of sutures of the bones of the skull. In sporadic cretinism, on the other hand, we find a tendency to lack of synthesis, the fontanelles and sutures remain open a long time, the dentition is delayed, and yet we have the same physiognomy as in the endemic cretin. In the sporadic cretin the skin is pronouncedly myxœdematous, and it will be shown in the author's cases this was one of the chief points in the diagnosis of the disease at an early stage. The endemic type is not pronouncedly myxœdematous. The sporadic form of the disease is manifested by the same tendency to dwarfishness of stature as the endemic form. The anæmia in both forms is similar.

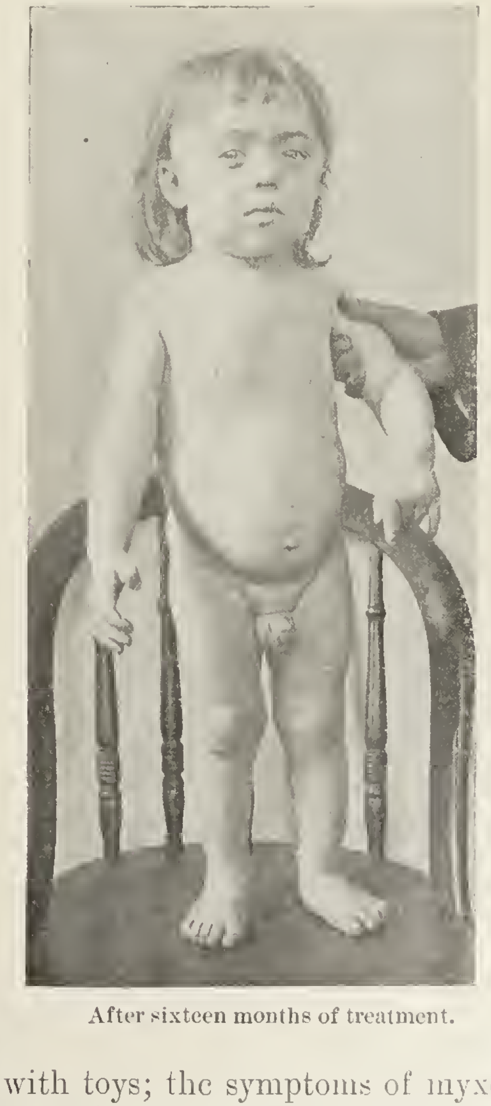
Author's Cases of Sporadic Cretinism.—The cases which have fallen under the care of the writer will be seen to be not only among the youngest cases on record, but they have been observed for a sufficiently long period to enable us to draw some definite conclusions as to the ultimate utility of treatment.

Fletcher Beach, in a discussion before the British Medical Association, presented statistics of fifty-two cases of sporadic cretinism, of which nine cases showed symptoms of the disease in periods from birth to the ninth month; up to the first year, two cases; at the first year, ten cases; up to eighteen months, four cases. Thus almost one half of the cases manifested symptoms of the disease before the eighteenth month.

CASE I. *Sporadic Cretinism.*—H. G., male, aged fifteen months, first seen October 10, 1895. Family history shows that the mother and father are first cousins, otherwise they seem healthy; mother is quite a stupid woman, though otherwise does not complain of symptoms of any illness. Mother has no goître, nor has the father. This child was born normally and breast fed; had icterus neonatorum at the age of one week, this lasting four or five weeks. Mother says the child has not at any time been like her other children. He has always seemed stupid for his age, has always been pale, and had a protruding tongue. Has never held the head erect. Has been constipated.


CASE 1.—Before treatment.


After seven months of treatment.


After sixteen months of treatment.

Status Præsens.—Child has an idiotic appearance, a foolish laugh most of the time, is indifferent to surroundings; does not play; has a typical wrinkled, at the same time myxœdematous, skin. The hands are large and flat, saucerlike; the skin is wrinkled over them and cold. The color of the skin is greenish-white; the anæmia is intense; there is an œdematous appearance about the eyes; the bridge of the nose is flattened; the lips are much thickened, and the tongue is thick and protrudes from the lips. The hair is dry, red, and sparse; the forehead narrow; the whole face prognathous; no teeth. There is an inspiratory crow at times, and the voice is a deep guttural. The neck is short and thick; the chest shows nothing abnormal as to contents. Abdomen large, protuberant, and measures fully fifty centimetres. The genitals, scrotum and penis large; the skin of scrotum thickened. Extremities short, as compared to length of body, giving a dwarfed appearance; no deformity.

Internal or rectal temperature, 96°; respiration, 20; pulse, 80.

Hæmoglobin (Fleischl), 18.

White cells, 18,600; red cells, 5,460,000.

After the administration of thyreoid, improvement was noticed within a week. The bowels, hitherto constipated, improved. In two weeks the child was much brighter, the puffiness of the eyelids was reduced; rectal temperature mounted to 97.5°. Hæmoglobin, 30.

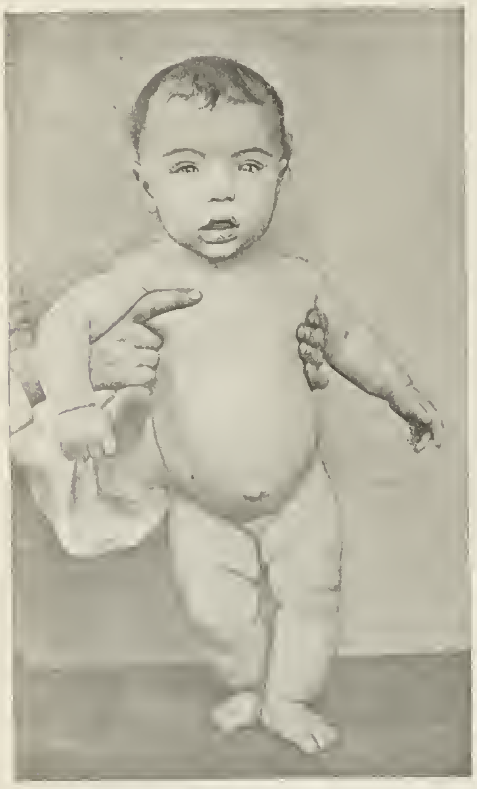
In two months the improvement was most marked; the child played with toys; the symptoms of myxœdema about the face were much reduced, and the tongue became less thickened. Hæmoglobin, 45.

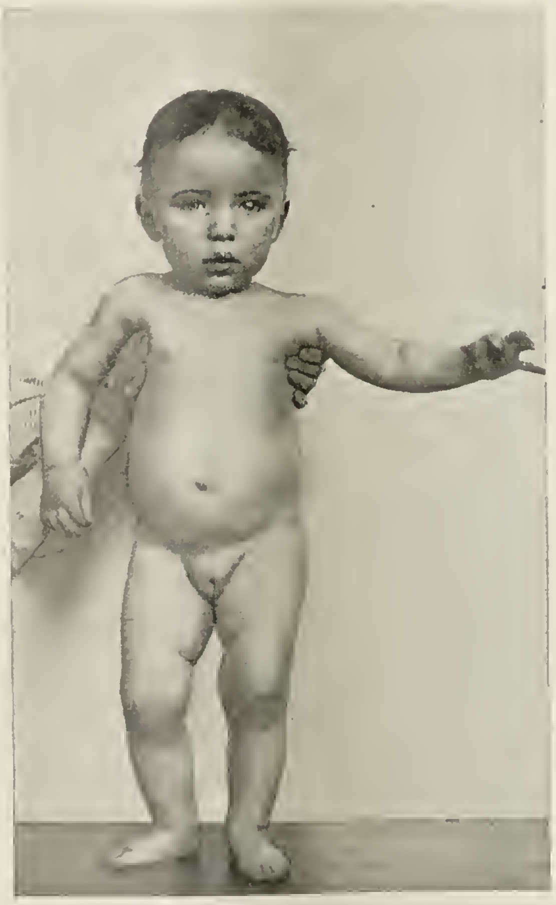
After five months of treatment the child was presented at the Academy of Medicine; the child had grown more intelligent; the myxœdema had disappeared; the tongue was still slightly enlarged; the rectal temperature 98° to 98.4°. The hair was replaced by a fine silky growth; the color of the child fair. Hæmoglobin, 55. The teeth have gradually begun to appear. A year of treatment finds an intelligent, chubby child, good-natured, playful; begins to walk along the sofa; has eighteen teeth; tongue is no longer protruded; genitals still large and hands large. Hæmoglobin, 65. Can not talk as yet.

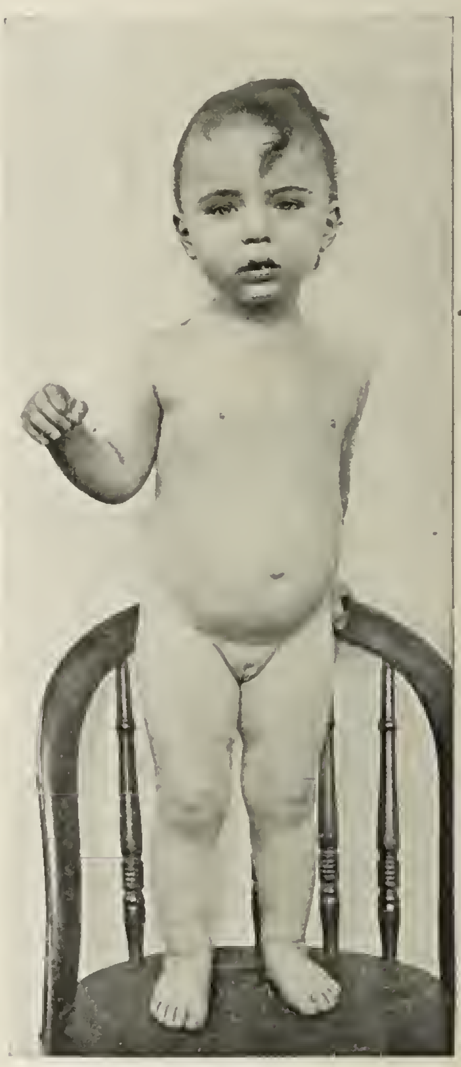
To-day we find a fairly intelligent child, walks and acts like a normal child much younger; does not talk but in monosyllables; is good-natured; no signs of myxœdema; hair long and silky; the tongue is normal; hands still large and flat; the temperature is normal, or almost so. The child is not very strong in its extremities, yet walks unsupported. There is no anæmia that is marked. Hæmoglobin, 85. Received a grain and a half of thyreoid twice daily.

Epicritical Remarks.—In this case the myxœdema, the macroglossia, and the reduction of rectal temperature were marked. The hæmoglobin initial stage was 18, has gradually increased to 75, and the relation of the red to the white cells has increased from 1 in 290 to normal.

It may be remarked that this child only for the past month has been able to walk about unsupported, this being much delayed as compared with other children. The macroglossia was long on the retrograde, and at first the habit of protruding the tongue persisted, though the tongue from day to day was growing perceptibly smaller. Now, though thirty-one months old and a handsome child, he does not perceive as rapidly as other children the relations of surrounding objects to each other, he smiles intelligently when played with, and, on the whole, makes a good impression, but not that of a child two years and a half old. He speaks the simple terms—mamma or papa. When he walks it gives us the impression that he is uncertain on his feet. The hair is silky and long, the lips are no longer thick, nor is the tongue; the abdomen is not protuberant, and the relative length of the abdomen and extremities seems proportionate. The hands alone still seem a little large and flat, and the child is easily chilled, especially the extremities.


Case II.—Before treatment, aged twenty months.


After a year of treatment.


After twenty-two months of treatment.

It should be noted in the history that the child was jaundiced after birth, and it will be seen that another case, his younger sister, presented symptoms of cretinism at birth, was also jaundiced at this time, as also the following case:

Case II. *Sporadic Cretinism.*—Symptoms of myxœdema especially marked. Female child, aged twenty months, first seen April 10, 1895. Family history shows that the mother and father are cousins, one remove. Mother and father healthy, no goître; but the mother has a slight, scarcely noticeable fullness over the isthmus of the thyreoid; this appeared during her pregnancy with this infant. Infant is breast fed; when two weeks old was jaundiced; this continued three or four weeks. When three months old had adenitis of glands in the neck. At the age of six months the mother says the infant became more and more stupid and weaker physically. It had attempted to walk when a year old, but now it made no effort to do so. During the last two months the child had developed abscesses on the hands and feet which refused to heal. The face of the child had changed so markedly as to be noticed by strangers.

Status Præsens.—Mentally a very stupid child, takes notice of nothing about it; attention can not be drawn to bright objects or striking colors.

Skin has a greenish-yellow, waxy appearance, especially in the face; can not hold its head erect for more than a moment; hair sparse and very dry. The upper and lower eyelids are much swollen, and bridge of the nose flattened; puffiness of the cheeks, and the lips are thickened. Decided thickening of the tongue; voice guttural; no teeth. Abdomen protuberant, and extremities small and dwarfed; skin thickened, but not truly œdematous, more myxœdematous. Chest organs negative; circulation very sluggish, as the skin about the abscesses to be described is bluish in tint. Rectal temperature, 96°; pulse, 100; respiration, 22; hands and feet cold; body cool; bowels constipated.

Extremities: Skin over extremities finely wrinkled and myxœdematous.

Abscesses: On the index finger of the right hand and the lower third of the left forearm, on the left thumb, and the dorsum of the left foot were abscesses which simulated syphilitic bone lesions (dactylitis). There were small abscesses with bluish discolored bases, discharging a creamy white material. It developed that they had been treated for months without effect. Urine negative. Hæmoglobin, 25 (Fleischl).

Thyreoid treatment improved the child within two weeks. The anæmia, myxœdema, and abscesses seemed to improve in this short time; the rectal temperature rose a degree. After a month the child was brighter and the abscesses on the extremities had healed; the myxœdema had almost gone. Hæmoglobin, 40. Child tries to sit up, and two months after beginning of treatment cut its first tooth, and tried to sit up in its chair.

July 31st, or three months after beginning of treatment, child had an attack of gastro-enteritis. The thyreoid suspended, and with this the infant did not have therapy of the thyreoids for two months. The symptoms of myxœdema gradually returned, the stupidity, puffiness of the face, thickening of the lips and eyelids, constipation, and lastly the abscesses reopened. The thyreoids begun again, and improvement was immediate and steady, and has continued up to the present day.

October, 1896.—Rectal temperature, 98.4°. Hæmoglobin, 70. We find a bright child walking; no anæmia that is marked; no symptoms of myxœdema; began to walk two months ago. The child is very intelligent, plays, and tries to talk; the talk is not perfect, but she can make herself understood. We still see a child fully three years and two months old impress us as a normal child of two years. Thyreoids at present, two grains a day.

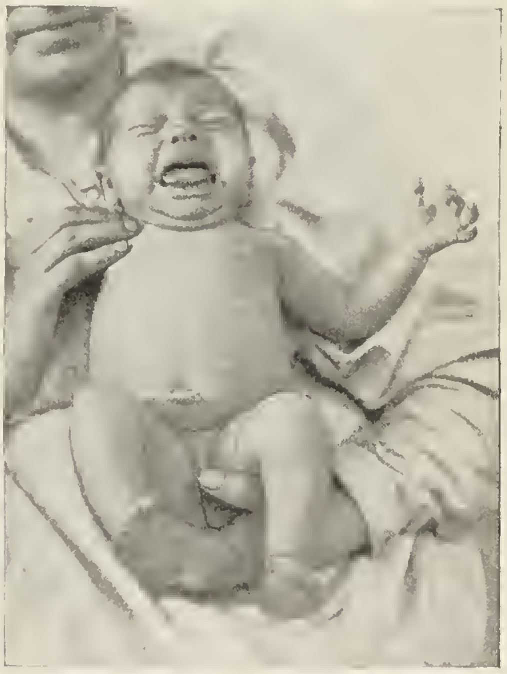
March 1, 1897.—Hæmoglobin, 85.

Epicritical Remarks.—In this case we have a predominance of the myxœdematous symptoms—that is, the œdema and puffiness of the face, skin, body, and extremitics seemed to be of the typical character known in the adult as myxœdema. The child was in good health until the sixteenth or seventeenth month, when it developed abscesses over different portions of the body, when it came under observation, as will be seen by referring to the history; some of these abscesses were on the fingers and back of the hand, resembling those seen in congenital syphilis. They differed from them in that the skin around the summit of the abscess was of a dark bluish tint, due to the sluggish circulation in the presence of a reduced body temperature. The discharge from the abscess could not be called pus; there was a whitish creamy fluid, which, when examined under the microscope, showed detritus and a few epithelioid nuclei. They healed under the thyreoids, and they in every way answered to the description of similar foci of necrosis found in subjects of endemic cretinism. A most interesting part of the history in this case was the return of all the symptoms of myxœdema after a temporary suspension of the treatment. The anæmia, the myxœdema of the face and extremities, the reduced body temperature, and even the abscesses, these improved again when treatment was resumed. Though the child walks and talks to-day, it is far behind a child of its own age (three years and a half) in normal state. Though intelligent, it is not very bright; it has an intelligent smile and laugh when played with. It walks without support, and talks sentences of several terms. The voice has a normal timbre, but the child is fully one year behind other children in development, and one looking at the child would take it for a normal child about two years and a half old. Thus in psychic development it has lost as much as it was advanced in the disease when it came under treatment. This child is also easily chilled. Its hands at times seem much colder than those of normal children under like conditions of weather. It notices more the relations of surrounding objects and persons than Case I, and is not in any way hard of hearing. The skin and hair are normal.

Case III. *Congenital Sporadic Cretinism or Myxœdema.*—Female infant, aged one month, seen first on December 24, 1896. This infant is a sister to the patient in Case I, and is the first infant born to the mother after the cretin, Case I.

The birth was a normal one. When four days old, jaundice neonatorum appeared and persisted six weeks. At the age of a month the mother brought the infant to me for the jaundice.

I saw a fairly nourished infant still jaundiced. The expression of the face was striking; the infant did not cry unless severely teased; it seemed very torpid. The head was round, broad at the base of the skull, smaller at the summit, not markedly pointed. The abdomen was distinctly rotund; the extremities were short, but not deformed. Child was short and thickset. There was no myxœdema of the skin, but the whole surface was cool to the touch; lips were slightly puffed; tongue was very large and thick; macroglossia; neck short and thick.



Case III.—Congenital sporadic cretinism a child a month old.

Head: Circumference, 38 ctm.; antero-posteriorly, 23 ctm.; bitemporal, 20 ctm.—rather of the oxycephalic type.

Fontanelle ant., 3½ × 2 ctm. Sagittal suture open to the occipital depression.

Thyreoid not palpable.

Hæmoglobin, 85. Temperature, rectum, 96°.

As said above, child is stupid, and clapping of the hands failed to attract its attention. Under thyreoid treatment the temperature gradually rose in the rectum to 98°. The infant became bright and seemed to notice surroundings and smile. The tongue is becoming markedly thinner, and the face is taking on a normal expression. It plays and laughs and cries as other infants; forehead is broader and not wrinkled.

February 15th.—Hæmoglobin, 60. Temperature, 98.4°, rectal. In this case at no time could thyreoid be felt and no supraclavicular masses of fat were present.

In this case we find a newborn babe, whose mother had previously given birth to a cretin, showing symptoms of slight cretinism. The stupidity of the infant, the reduced internal temperature, the peculiar conformity of the extremities as related to the trunk, the thickened tongue, the wrinkled skin on the forehead and hands, the short animal forehead, the thick lips, the immense tongue (macroglossia), coarse cry, the immediate improvement under thyreoid of the stupidity and the thickened and hypertrophied tongue, all point to the inevitable conclusion that here we have to deal with a congenital cretin, who, if allowed to progress, would develop the full symptoms of the disease.

It is an interesting fact that in this case, early in the disease, the hæmoglobin was greater than later on, though the infant was immediately placed upon thyreoids. This would seem to point to the fact that the anæmia of cretinism develops as the disease progresses, and is not present at the initial stage of the disease.

Thus in all the cases brought forward by the writer in this paper as sporadic cretinism the disease was diagnosticated at a very early period, and in the third case at a period immediately after birth before the disease had time to fully develop. They have been under observation, two of them, for a period sufficient to demonstrate that though the thyreoid treatment rescues these unfortunates from a state of perpetual idiocy, it does not restore fully the psychical state which has become dwarfed for a greater or less period before the therapy was initiated. Though bright, the children are not the equals of children of normal condition of their own age, but are very slow in appropriating ideas and in perfecting their speech vocabulary. They seem prone to attract to themselves the least ailments; both of our cases, I and II, having contracted diphtheria just as other children, and have recovered. We have seen in all the cases the thyreoid gland could not be made out. The masses of supraclavicular fat were not present in any of our cases. There were in the first two cases very pronounced symptoms of myxœdema; in the newborn infant this was not the case. The stunted growth was marked in all the cases, and in Case II the photograph shows the marked disproportion of the lower extremities and length of body. In all cases the therapy repaired this defect. The voice in all three cases was of a barking, hoarse nature, and in two of the cases this voice persists. The hair was coarse and dry in two of the cases, and was replaced under therapy by a silky growth.

Anæmia was marked in the two advanced cases, but a blood count failed to establish a marked leucocytosis, which Horsley and Kocher found in the myxœdema produced by extirpation of the thyreoid in the monkey and human subject. The marked improvement of the anæmia was pronounced in the advanced cases, and in the newborn infant was not immediate—on the contrary, seemed to progress until the correct dosage of thyreoid was found.

The psychical status in all cases was stupid and reduced to the idiotic; even the newborn babe would only react when irritated, and then would relapse into a stupid sleepy condition.

The rectal temperature was reduced in all cases, and immediately rose when the thyreoids were given. The reduction of temperature was full two degrees below the normal in all cases.

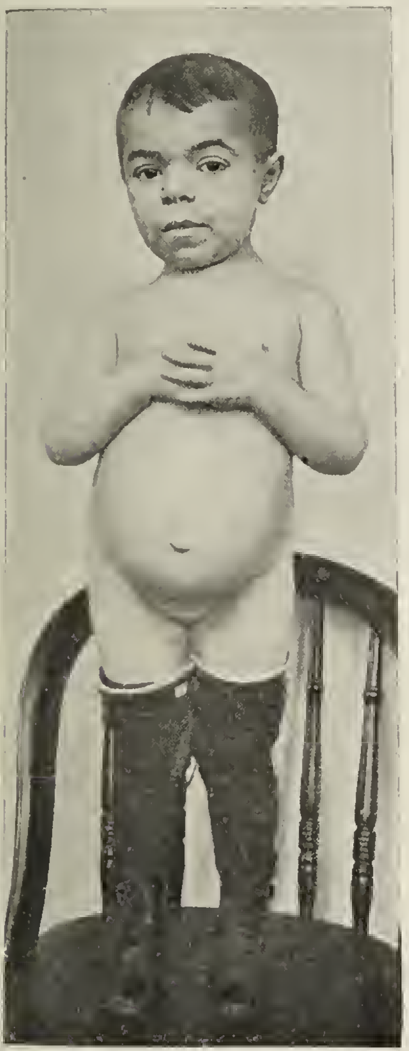
Cases which simulate but are not true cretinism have been recorded from time to time by observers as either true cretinism or pseudo-cretinism. There is an objection to the term pseudo-cretinism, but there are forms of disease which, if not true cretinism, are still very difficult to classify.

In this paper I shall consider the following forms of disease, and try to point out in what way they differ from the true cretinoid degeneration:

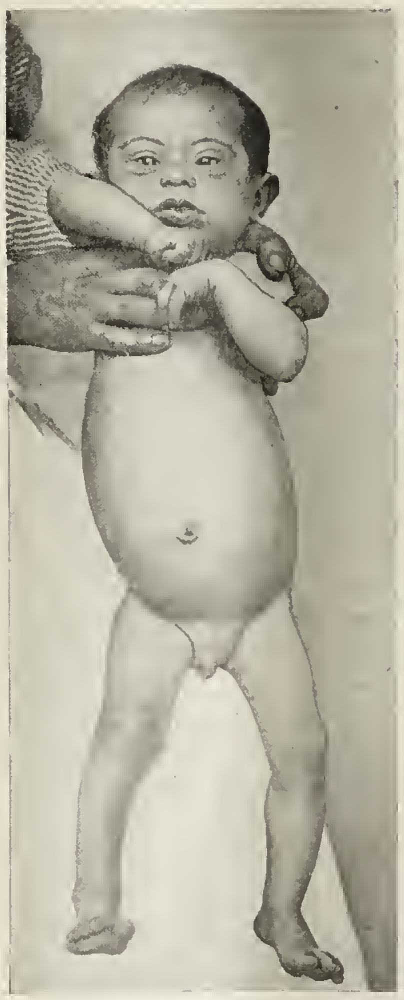
1. The dwarf with idiocy.
2. Mongolian idiocy.
3. Lipomatosis universalis (a form of partial idiocy and fat accumulation).
4. The peculiar state of hydræmic anæmia in children as distinguished from myxœdematous degeneration.

The Dwarf with Idiocy, or Partial Arrest of Intellectual Growth.—A case of this kind we found in our clinic. The child was ten years and a half of age, born in a foreign country of healthy parents. Father's sister has epilepsy; the other children healthy. We find in this case a perfectly well-formed individual, with well-proportioned hands and feet. The head is not badly shaped, though tending to the brachycephalic type. The child has a slight anæmia, and this is probably due to lack of proper diet. There was not the remotest indication of myxœdema. The dwarf is intelligent, wishes to learn, and plays with other children. She has only talked for the past year, and now talks short sentences well. The internal temperature is normal. The child was brought to the clinic for nosebleed. It seemed to the author that the retarded intellectual condition was due as much to the neglect of the parents, who looked upon the little one with disfavor, as to the dwarfed brain. The head was large if anything. The child was strong, and the only fault it possessed was that when irritated it would fly into a passion. The expression of the face is not cretinoid and is not prognathous. Thus we have none of the symptoms of cretinism, and yet the case was brought to the author as one of probable cretinism. We find in it only an exquisite example of the dwarf with weak intellectual status.

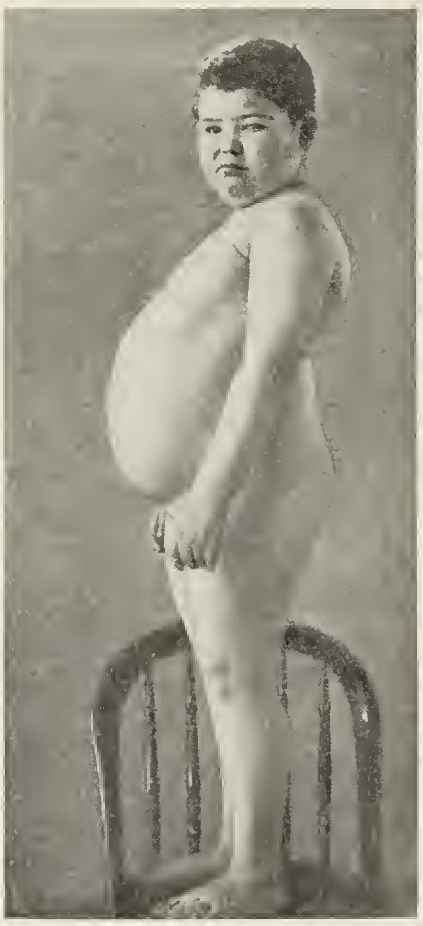
The Mongolian type of idiocy has probably been more than any other form of disease improperly classed with the cretins. At a recent meeting of the British Medical Association Tedford Smith and Beach presented papers in which the Mongolian idiot was fully described and the effect of thyreoid treatment discussed. The idiots of the Mongolian type resemble the cretins quite closely. There is the stunted growth, the open mouth, thick lips, and large tongue; in some the tongue is being constantly protruded; the hoarse guttural voice, mental apathy and sluggishness; sometimes subnormal temperature; in others I have found the temperature normal. The skin is dry and hair coarse, but in the young infant not particularly so. The musculature is quite flabby; the occipital part of the skull quite deficient, the neck short and thick. The infants of this type are so weak as to be unable to hold their heads erect. Frequently there is strabismus, and the eyes have the distinctly Mongolian type. The head is small and mostly brachycephalic, as can be seen from the portrait; the fontanelles remain open long, and dentition is delayed. But there is no myxœdema, and the hands, though flat, are not saucerlike, as those of the cretin; the small finger of both hands is bent slightly at an angle internally. The anæmia may or may not be as pronounced as that of the cretin, but there is not that greenish hue to the skin, nor is the prognathous face as marked. Though the muscles are flabby, there is no deformity of limb. Their improvement under thyreoid is still a matter of discussion.



Dwarf with retarded mental development, aged ten years and six months.



A Mongolian idiot aged five months.



Lipomatosis universalis, child aged ten years.

Idiocy of the Mongolian Type with Macroglossia.—Male infant, aged five months, first seen May, 1896. There is nothing of note in the family history. The labor was rapid, infant small; brought up on artificial means.

The infant has an idiotic expression to its face, there is convergent strabismus, and the tongue protrudes, showing the macroglossia. The infant does not hold its head upright, but nods it from side to side. The head is broadest in its biparietal diameter, and flat on top and also flat at the occiput. The fontanelles are all open and the sutures quite wide. The neck is short and thick, and this can best be seen from behind. The skin is not myxœdematous or cool. The hair is sparse and dry; no teeth; abdomen quite large; extremities long and thin, not of the cretin type; musculature very soft and flaccid. Infant notices, but in a semistupid manner. Eyes converge, giving the Mongolian type to features. Rectal temperature, 99.8°; hæmoglobin, 25.

The above brief *résumé* will serve to show how distinct from cretins this type is, yet hardly characteristic of the form of degeneration. When these infants grow up they maintain the close resemblance to the portrait, and all of these idiots seem to have a similar appearance.

Lipomatosis Universalis.—The following case is an example of an exceedingly rare condition of childhood. This case was originally in the service of Dr. Scharlau, in the Mount Sinai Hospital, and was referred to my dispensary for outdoor treatment. The patient was under my care for over a year, and then passed to another hospital and was published in *Pædiatrics* of 1896, by Dr. Dessau. The case was recognized by the writer as one of lipomatosis universalis, and so treated. In many respects it is similar to cretinism. The head of the patient is small, the forehead low, but here the resemblance ceases. There is no prognathic face, and there is no myxœdema, the skin being warm and smooth, and there is no anæmia. As seen, the accumulation of fat is enormous. The intellect is that of a quasi imbecile, yet the boy talks quite intelligently on simple subjects. The muscular tremor and weakness, as also partial blindness, seem more a result of lipomatose degeneration.

Lipomatosis Universalis, with Blindness and Muscular Weakness and Mental Arrest of Development.—Boy, aged ten years, first seen February 18, 1895. Family history, on the whole, good; no neurotic tendencies. Birth of this patient normal; breast fed; healthy infant, not markedly fat. Walked at the age of one year, and talked when two years of age. Always sleepy, and in this respect differed from other children. At the age of six years sustained a fall on the side of the head. About this time began to grow so stout, especially about the abdomen, as to cause the mother to go to a physician for advice. His eyesight next began to fail, and he finally has become quite blind. Tremor of hands and weakness have also appeared with great increase of fat.

Status Præsens.—We find a boy of ten years with a fat accumulation reminding one of an obese adult. The head is small, with a narrow, retreating forehead and small occiput. The hair is dry and curling, the face is flat and broad; the expression worried, as if he did not see, dull, stupid in repose; ears large; sense of taste and touch very highly developed; hearing acute; speech is deep-voiced; tongue normal. There are tremors in hands and lower extremities on volition, as in buttoning his coat, but not in repose. Reflexes at patella and ankle exaggerated. Mentally bright when talked to, stupid if left alone. If left alone, will sleep constantly, and will only rouse when touched; will sleep for fully twenty-four hours.

Physically the fat accumulation is enormous; weighs a hundred and sixteen pounds. Initial weight, ninety-nine pounds when first seen.

Height, 129 ctm.; head, glabella to occiput, 53½ ctm.; breast, 81 ctm; arm, 28 ctm.; forearm, 21 ctm.; wrist, 16 ctm.; abdomen, 95 ctm.; thigh, 49 ctm.; leg, 53 ctm.; ankle, 24 ctm.

Skin over body is dry; hair dry, grows very slowly, and nails grow very little; never pares the nails.

Mentally: Fears the approach of strangers, as he is blind and doesn't know whether they are friendly; when assured, is affectionate. Memory is very good; is intelligent; can count change by touch.

Gait: Is that of a very fat individual.

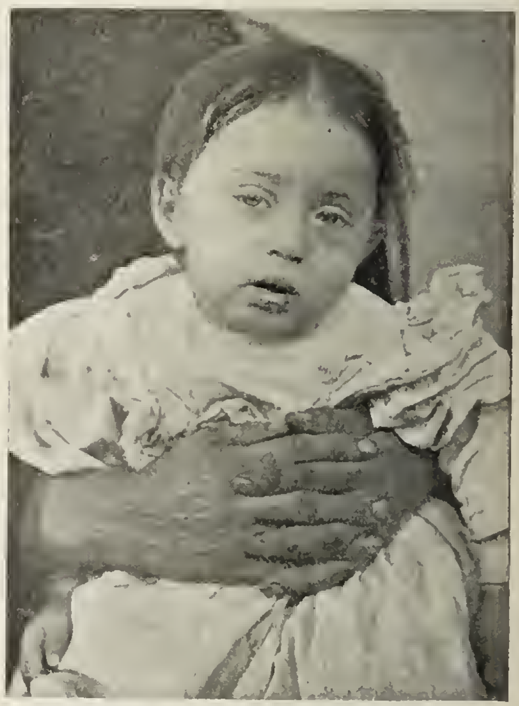
Eyes: Examined by Dr. William Cowan. Marked atrophy of the optic nerve and retinæ; opacities of the vitreous.

Heart: Weak, and gives impression that both sounds are alike; the muscular part of first sound not present. Irregularity in rhythm.

Genitals: Atrophied. Urine: Nothing abnormal. Appetite ravenous. Thyreoid treatment; no effect.

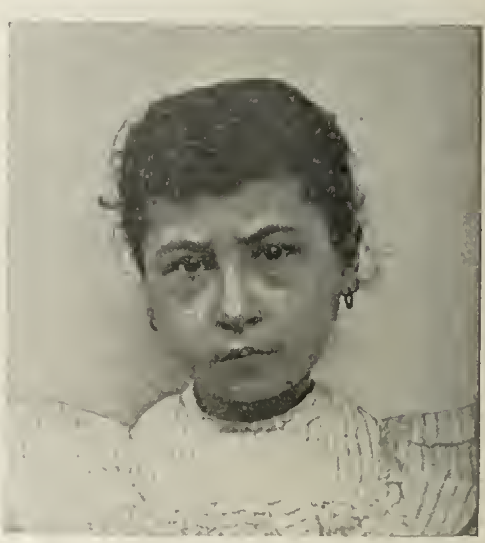
The above are only excerpts of a very lengthy history.

The last series of cases which I desire to describe are a peculiar class of hydræmic anæmias with a peculiar swollen condition of the eyelids, face, and lips, sometimes of the extremities, which might by the inexperienced be taken for a beginning myxœdematous degeneration. Fortunately, the hydræmia in the special set of anæmias here recorded rarely extends to other parts of the body. The internal temperature is normal, and these subjects are exceedingly bright intellectually. In neither of the recorded cases was albumin found in the urine. In short, there is only a facial semblance to the myxœdematous degeneration. The bony system is perfect in both cases; even in the face we find no obliteration of the bridge of the nose; no macroglossia; no affection of the hair, nor is the skin harsh or dry.


Hydræmic anæmia, child aged fifteen months.

We append two cases of this affection with portraits and brief histories:

CASE I. *Hydræmic Anæmia.*—Male infant, aged fifteen months; seen first October, 1896. Family history negative. Infant is breast fed: is now beginning to walk. He is a fairly bright infant, notices objects and plays. Is exceedingly anæmic; skin is of a greenish-white hue; there is not only puffiness under the eyelids, but the lips are swollen, and when at rest the face has a stupid expression. The extremities are well proportioned as compared to the body, and there is a mild form of rhachitis. Abdomen large; spleen slightly enlarged. Rectal temperature, 98.2°; urine negative. Hæmoglobin, 30.


Hydræmic anæmia, child aged ten years.

CASE II. *Hydræmic Anæmia.*—Female child, aged eight years, first seen May, 1896. Birth was normal; infant breast fed; has always been pale and weakly. Is now a fairly well-developed girl. Has an extreme form of anæmia; skin of a claylike color; there is swelling under the eyelids; puffiness of the face and lips, not of the extremities. Hair glossy, not dry. Angle of eyes give the features a Mongolian type. Mucous membranes very pale.

Musculature badly developed. Signs of early rhachitis, otherwise body well formed. Mentally, a very bright child, and satisfactory at school. Hæmoglobin, 55. Urine negative. Red and white cells, 483 to 1. Temperature normal.

From the short excerpts given of the histories of these two interesting cases it will be seen that they resemble a myxœdema only in the puffiness about the skin of the face as detailed, but here the resemblance stops. There are none of the characteristics mentally, or in the skin of the rest of the body, or in the bones, to bring these cases in the same class as the cretinoid degeneration.

The œdemas due to nephritic disease are not so apt in children or infants to be mistaken for a myxœdematous condition.

An examination of the urine in infants and children will eventually clear up the case. In adults, M. A. Starr has related cases where myxœdema was mistaken for Bright's, or even cases where albuminuria with myxœdema were coexistent, yet in children the kidney disease presents no difficulties of diagnosis. Nor are we likely to have, as in the adult, marked kidney changes without positive evidences in the urine; such cases must be exceedingly rare.

In conclusion, the author wishes to express his obligations to Dr. Emily Lewi for untiring industry in following up the history and therapy of these cases and making all the blood examinations at various intervals.

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66 East Fifty-eighth Street.

REMARKS ON

TREATMENT OF CHRONIC AFFECTIONS OF THE FAUCIAL TONSILS,

WITH DEMONSTRATION OF INSTRUMENTS.*

By J. W. GLEITSMANN, M.D.

A few years ago I began to pay greater attention to chronic affections of the faucial tonsils not complicated with actual hypertrophy, and soon became aware that I could relieve many vague pharyngeal ailments and neurotic symptoms for which no other pathological condition could be found.

While looking over the literature in the preparation of this paper I found that quite a number of excellent essays had been presented to the association on this subject: Dr. Smith (1883) and Dr. F. I. Knight (1887) wrote on neuroses of the throat; Dr. Delavan (1883) on the lacunæ tonsillarum; while Dr. Roe (1889), Dr. Allen (1891), and, finally, Dr. Farlow (1895) gave an exhaustive description of the treatment of tonsillar diseases. With these valuable monographs my task has been greatly facilitated, and I need not have recurrence to the different chronic affectious or to the various procedures recommended for their treatment. I shall therefore confine myself to a few points which have lately engaged my attention, and for which I endeavored to devise some means for relief.

With the exception of hypertrophy there is probably no other chronic affection of the tonsil more frequent than chronic inflammation of its follicles, so well described by Roe as to require no further detailed exposition. The smooth surface of the tonsils disappears; they present an irregular contour, the follicles undergo a process of destruction, and the lacunæ become often filled with white masses, the products of inflammation, which, being retained, are a fruitful source of different ailments. Roe also correctly gives as the reason for these exudations being frequently overlooked that they give rise to little or no discomfort to the patients, and emphasizes at the same time the necessity of a thorough examination of the tonsils. Retching exposes the inner surface of the tonsil too short a time for therapeutic measures; and of all devices recommended, I have given preference to a small so-called palate hook, bought about thirty years ago, which, in this instance, is miscalled, but which serves as an excellent means to push the anterior pillar aside. In this manner the uppermost part of the tonsil can also be easily exposed—a locality where we find the velar tonsil described by Allen, and where we often detect deep diverticula filled with caseous *débris*, which would otherwise have escaped our observation.

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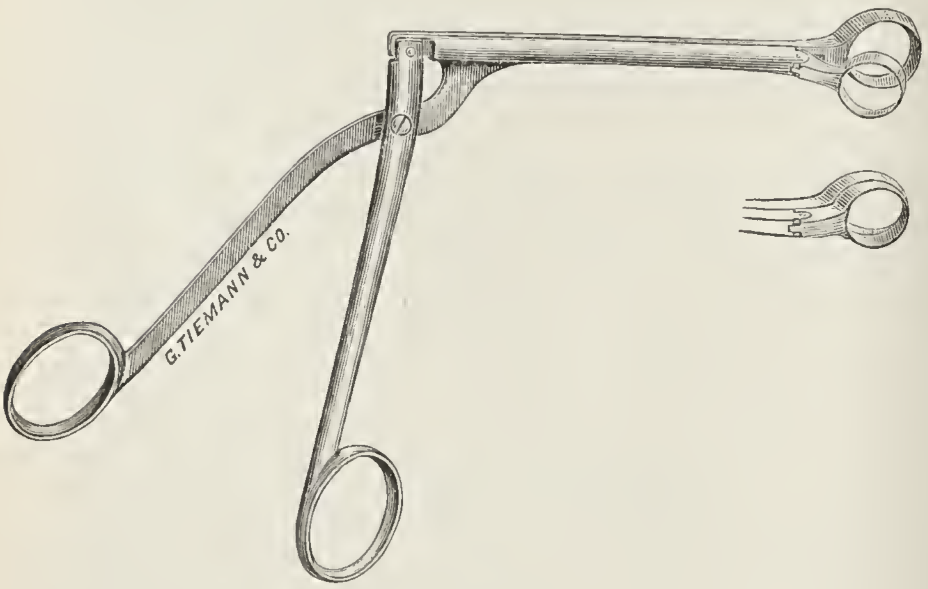
* Read before the American Laryngological Association at its nineteenth annual congress.

When we see these white exudations in the crypts, which we know to contain large masses of leptothrix filaments, their mere removal and subsequent applications are generally insufficient to effect a cure, and the authors agree that a large enough opening has to be made to prevent their reformation. To tear the duct open, I have employed, for two years Moritz Schmidt's instrument, which is a blunt hook, but answers the purpose very well. As the pulling required to separate the parts is often painful, especially when the instrument has been deeply inserted into a lacunar opening, I had the side of the instrument sharpened, retaining its blunt tip, and also constructed another one with a pointed tip, to enable it to enter the tonsil at any desirable point requiring severance of the tissue. The after-treatment necessarily followed I shall pass over, as it has been fully described by others. I can conscientiously recommend these little instruments to those who approve of this method of operating. They will also be found useful for separation of the anterior pillar from an enlarged tonsil when such proceeding is advisable.

Another abnormal condition which is of rarer occurrence, but generally associated with the affection just described, is the presence of a flap or fold of the tonsil, sometimes occupying its whole surface and preventing an inspection of its posterior portion. At a superficial examination this fold may erroneously be considered to constitute a part of the anterior pillar, but, drawing the latter aside with a suitable hook, an intervening space between the two, containing in some cases a small amount of lymphatic tissue, can easily be seen. The larger part of the tonsil will always be found behind this fold, and in the majority of cases I have seen it is this locality in which the greatest destructive changes, with accumulation of white deposits in the lacunæ, will be observed.



I am not prepared at present to give a satisfactory explanation of this dense membranous formation, but am inclined to believe it to be the result of a previous attack of acute inflammation, combined with the chronic follicular disease. Harrison Allen gives a very good description of this condition in the *Medical News* of July 8, 1882, in which he says that in one of his cases the palatoglossal fold stretched out as an operculum over the tonsillar space, almost touching the palatopharyngeal fold. When the opercular fold was drawn forward a number of tonsillar pellets were seen lying against the face of a flattened nodular tonsil. We learn from his remarks that in his case the fold was part of the palatoglossal arch, which was adherent to the tonsil and pushed toward the median line, but otherwise the conditions and their sequelæ are the same as in my own patients. Allen removed the fold with a pair of blunt curved scissors, and A. B. Kelly, of Glasgow, devised a punch, closing anteroposteriorly, by which small pieces of tonsillar tissue—especially at the upper angle—can be excised.*

I had a very typical case of this affection two months ago in a lady who suffered from severe indigestion and nervous debility, for which she consulted a well-known practitioner. Complaining of throat trouble, she was referred to me, and at inspection revealed the above-mentioned lesions in the most striking manner. Behind the anterior pillars on both sides there was a moderately deep groove, containing a minute amount of normal follicles; then came a broad, dense, thick fold extending the whole height of the tonsil, and covering the latter to such an extent that it could only be seen when the fold was forcibly drawn forward. The tonsil was in a state of complete destruction, nodulated, and countless white deposits were interspersed in its tissue. It was evident to me that before a satisfactory treatment could be instituted the removal of the dense fold, which hemmed in the secretions and prevented their expulsion, was necessary. The destruction of the fold by galvanocautery was in this case deemed inexpedient on account of its size and density, and I resolved to remove it with curettes. As Heryng's laryngeal double curettes were difficult to handle, I employed Ruault's punch. The result was perfectly satisfactory, but I was not pleased with the large size and the vertical action of the instrument, which necessitated its horizontal introduction, making it difficult to grasp the fold between its cutting blades.

At my suggestion, Tiemann & Co. constructed the tonsillar clipper which I present for your inspection and criticism. The instrument is a modification of Ruault's punch, the blades being reversed, cut in a horizontal instead of a vertical plane. It is also considerably smaller, and admits of easy adaptation; it grasps the tissue firmly, and removes the parts seized without difficulty. I have used the instrument recently in a similar case, and have not been deceived in my expectations. The pain caused by the operation is moderately severe, and with some patients it is advisable to inject a few drops of a ten-per-cent. cocaine solution into the fold before excision. If the fold is very large, it is better to remove it in two or three sittings than all at once, if we want to avoid unpleasant reaction. The hæmorrhage is not severe and can be readily arrested with cracked ice. After-treatment I have found unnecessary, but, if desired, some light styptic or caustic solution can be applied.

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* *Lancet*, 1894, ii, p. 18. Hartmann's instrument (*Deutsche med. Wochenschrift*, 1894, p. 571) is identical with Ruault's punch, shown to this association by Dr. Farlow two years ago, only smaller in all directions.

When the blades are made still smaller, the clipper may also be employed as a conchotome, working on the same principle as the conchotome shown to the association two years ago.

AUTOTOXIS.*

By R. A. THOMPSON, M. D.,

NORWICH, N. Y.

THE history of medicine from its first crude pencilings to its present elaborately illustrated text demonstrates the oft-repeated assertion that, "the facts of one generation are often the fallacies of the next."

In our own time experimental bacteriology is the prevailing epidemic among medical men, and, wonderful as may appear its revelations and possibilities, we are reminded by the philosophy of the past that until the crucial test of time has evaporated and analyzed accumulated evidence—until it has determined the fundamental verities, which it may be assumed to contain—we may wisely suspend judgment, relying on best-established data for that practical knowledge which will most avail in our battle against disease.

The myriads of macroscopic and microscopic forms which the organic world affords have almost limitless fascinations for the explorer, and the contagion of his enthusiasm should rather be encouraged than decried, that we may grow in the knowledge of every organism; yet so long as nutrition is dependent upon a process of hæmatosis by which man consumes over three hundred cubic feet of oxygen every day, and exhales its complement of carbon dioxide; so long as the process of assimilation implies a process of disassimilation; so long as secretion must of necessity be followed by excretion; so long must the chemistry of vital processes be the ever-present thought in the mind of him who seeks to rectify the errors of such phenomena.

In health the male adult exhales more than twenty-four hundred cubic inches of carbon dioxide every day. Through more than two million sweat ducts he discharges over two pounds of perspiration charged with excrementitious matter. The urinary secretion daily measures more than forty-eight ounces, and contains over three hundred and fifty grains of urea, its total solid constituents being from thirty to sixty parts to a thousand. Add to this four ounces and a half of fæcal matter, the regular diurnal discharge from the intestinal tract, and it is easily conceived that the secretary of the interior has duties quite as important as are those of the grand commander of the great army of omnivorous phagocytes which we are told guard the citadel of life against invading bacterial hosts, and we imagine that he may quite as often require such substantial aid as we may render.

"The healthy body offers very little hospitality to microbes." Bacteria are omnipresent, but in healthy people seldom cause disease. When, however, from disturbed nutrition, so generally dependent on deficient excretion, vitality is lowered and the normal chemical constitution of the body modified, the soil is in proper condition for the development of disease germs, and a crop of weeds is the result. It would seem more practical to correct morbid conditions of the soil than by antiseptics to attempt destruction of the germs of all the tares, yet the latter method of warfare may be carried on simultaneously if desired.

As physicians we should generalize our observations, but individualize our patients.

The designation of diseases by special names, if it leads to the treatment of disease according to its name, may in practice be rather a hindrance than a help, since a single cause may produce many morbid conditions.

Autotoxis was diagnosticated by Melampus, one of the earliest Greek physicians, in the daughter of Poetus, king of Argos, who, having discovered the cathartic properties of hellebore by observing its action on goats, administered it to his patient and cured her. The same condition has afflicted the daughters of men from those early days even to the present time.

According to modern nosology, it is often diagnosticated as anæmia, chlorosis, bronchitis, amenorrhœa, rheumatism, etc., and treated with all the various preparations recommended for these several conditions, or, if the patient be a female, perhaps sent to a gynæcologist, when we would do far better to follow the example of Melampus, and ourselves give her hellebore or some better laxative, which will regularly bore its way through the alimentary canal until pure air, healthful exercise, wholesome food, daily habit, or operative interference shall have overcome the constipation which, by permitting absorption of fæcal material, has produced that self-poison upon which her symptoms depend.

Nervousness, headaches, and backaches are among the most common symptoms met in general practice, and these symptoms are generally associated with deficient excretion. A sudorific, a diuretic, a cathartic, or the successive administration of these agents is more rational than the use of nervines or anodynes, and, in the majority of cases, eminently satisfactory.

Hydrophobia is not always a sequela of rabies; it is sometimes a constitutional condition.

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* Read before the Third District Branch of the New York State Medical Association, held at Norwich, N. Y., June 8, 1897.

Hydropathy has many hints for regulars. Something less than two years ago I had several patients who complained of a group of symptoms, the most prominent of which were an unusual degree of nervousness and backache. Upon inquiry, I found that, because at the time our regular supply of city water was exhausted, water from the river being pumped into the mains, they were drinking no water at all. I prescribed in each case simply and solely large draughts of pure water from a certain spring, from which, with a little trouble, they could readily be supplied, and was pleased to learn that in two or three days these symptoms were gone. The relation of cause and effect was so apparent, and the treatment so promptly efficient, that, hereafter, when I find the symptoms of cerebro-spinal irritation, with the rational inference that it is due to chemical or mechanical contact of excrementitious matter with the tissue of brain or cord, I shall not forget the solvent action of *aqua pura*.

In conditions of nephrolithiasis, according to Osler, "the patient should drink daily a large but definite quantity of mineral waters, or distilled water, which," he adds, "is just as satisfactory." There can be very little doubt that the remedial effects derived at the various mineral springs are due to the increased quantity rather than the chemical constituents of the water drank. A large glass of water at bedtime will, as I have often observed, relieve nervousness and insomnia, presumably because it dissolves and flushes out those impurities of the blood which caused these symptoms. A thorough bath at bedtime opens occluded perspiratory ducts, and stimulates the terminal branches of cutaneous nerves. It lessens reflex irritation, favors transudation, and promotes sleep, thus avoiding drugs, which often have no other excuse than the thoughtlessness of the physician or the laziness of his patient. A thorough sponging with hot water over the spine may be incidentally mentioned as one of the best soporifics at our command. Also the application of flannel wrung from hot water to this region in conditions of eclampsia, instead of immersing the whole body. I can especially recommend the latter suggestion as being much less troublesome, more continuous, and equally efficient. I have found it particularly efficacious in controlling the convulsions of whooping-cough. The child can lie on its back and the hot fomentations thus be continuously applied. Cold applications to this region may also, in this connection, be mentioned as an efficient and excellent method of reducing high temperature. An ordinary washtub and clothes wringer, with a piece of rubber cloth, are easily provided. For an adult a sheet is folded once endways, twice sideways, immersed in water of low temperature, passed through the wringer, and laid on the sheet of rubber. The patient, by taking hold of the sheet on which he lies, is gently rolled on his side and the cold sheet placed in position. He is then rolled on his back, resting upon it, head and trunk. Heat or cold is thus applied closely to the cerebro-spinal centres, and the general effect is quickly appreciated. So far as I know, the idea and technique of this little procedure are original, and I have wandered somewhat from my subject that I may recommend it to your consideration. Time and temperature will be determined by the effect desired.

The term aprosexia signifies difficulty in fixing the attention, and originated with Guye, of Amsterdam. He describes three types: "1. Physiological. 2. Neurasthenic. 3. "Nasal." The latter he thinks due to autointoxication from absorption of static lymph by brain tissue. Noting the experimental work of Key and Retzius, in demonstrating a communication between the lymphatics of the nose and those of the dura mater, he shows how such absorption may take place, and assumes that therefore it does take place, unmindful of the fact that nasal stenosis closes the chimney flue, lessens the supply of oxygen, and favors accumulation of carbon dioxide. This explanation seems more rational, and more in accord with fact: Nasal stenosis, the damper, which deadens the glow of intellectual fire, causing it to wane and flicker; chronic hypertrophic rhinitis and postnasal adenoids cause toxæmia from excess of carbon dioxide; aprosexia, insomnia; in a word, a partial chronic asphyxia results, to the lasting detriment of the child and the everlasting condemnation of those responsible for its neglect. Yet, whether aprosexia is caused by static lymph or carbon dioxide, autotoxis must be conceded.

The liver secretes from two to five pints of bile every twenty-four hours. We know that no such quantity is ever passed by the bowels. It is very largely again secreted and again absorbed, thus passing through the portal circulation repeatedly. When the portal circulation becomes surcharged with excrementitious matter, in consequence of constipation, hepatic disorders and gastro-intestinal indigestion follow. Again, as a sequence of indigestion, we have imperfect nutrition, impoverished blood, weak heart, and cold extremities on the one hand; on the other, unoxidized products taken into the circulatory current, to produce amygdalitis, bronchitis, rheumatism, eczema, etc. Cases of acute amygdalitis are so often the result of acute indigestion, and the treatment by a single dose of rhubarb and soda so promptly effectual, as to be interesting in this connection.

As before stated, about forty-eight ounces (fifteen hundred cubic centimetres) of urine should be passed daily. From thirty to sixty parts per thousand are solid constituents. Hence sixty-seven grammes, in round numbers one thousand grains, of solid constituents should be passed daily by the average adult, and that person who passes a greatly diminished quantity will suffer from uræmic poison. When a patient in the last days of gestation is passing only a hundred grains of solid constituents she is very dangerously near to convulsions or coma; and when a patient is passing four hundred grains there will be some degree of nervous irritability. Between these two examples we have a gradation of nervous symptoms from simple irritability to insanity. A process of calculating the total solids in the urine, sufficiently accurate and exceedingly simple, is to multiply the last two figures of the specific gravity by the whole number of ounces passed in twenty-four hours, and this product by one and one tenth. This gives the total solids passed *per diem.* The urinometer should, of course, be filled from the whole quantity passed in twenty-four hours, and the weight of the patient taken into account. From ninety to a hundred and eighty pounds would represent the ordinary extremes of a woman's weight, and from five hundred to eleven hundred grains the quantity of solids she should pass a day. Anything less than five hundred grains in a patient weighing ninety pounds would denote some degree of insufficiency, and two hundred grains, so far as my observation goes, will be associated with severe nervous phenomena. I am fully satisfied that amenorrhœa in girls and young women is frequently associated with this condition, whether in the relation of cause and effect I can not say. Embryologically the kidneys, ovaries, and tubes spring from the same source; and, clinically, we know that organic disease of the kidney is associated with irregular menstruation. Certainly stimulating diuretics have, in my hands, been far superior to iron tonics alone, and I have found no remedy so quickly effective, where renal insufficiency has been found associated with this condition, as the old "Basham's mixture," combined with acetate of potassium and infusion of digitalis.

Something more than a hundred years ago the famous John Hunter classified diseases of the skin into "those which sulphur could cure, those which mercury could cure, and those which the devil himself couldn't cure." Surely our pathology of the integument has advanced considerably since his day. Yet the doctrine of humors, then prevalent, has not in this field been wholly relegated to oblivion. Whether that condition of the system which Piffard is pleased to term "the rheumic diathesis" is thus satisfactorily explained, or whether it is better explained by supposing it to be none other than the so-called uric-acid diathesis, producing its effects through the chemical or mechanical irritation of unoxidized products circulating in the blood, we will not attempt to discuss, yet it is interesting to note that those agents, like mercury and arsenic, which are most successful in the treatment of chronic skin disease are those which most favor destructive metamorphosis, promoting at the same time more rapid elmination of effete *débris;* also, that those remedies most efficient in the treatment of rheumatism and allied disorders supposed to be dependent on a superabundance of lithic acid, generally known as uric acid, are either those directly eliminative, or those most potent in preventing intestinal putrefaction—as, for example, the salicylates.

According to Buchard, alcoholic extracts of fæcal matter are far more toxic than ordinary putrid matter; hence we see how skatol, indol, and other alkaloids of the fæces, being absorbed, may produce general toxic effects. From my own observation I am persuaded that constipation bears a causal relation to alcoholic mania, and the vivid remembrance of a case where temporary insanity, associated with obstinate constipation, following typhoid fever, was speedily cured by efficient laxative medication, serves but to confirm the recent contention of Allan McLane Hamilton to the effect that "various postfebrile, traumatic, alcoholic, and drug insanities are those in which autotoxis is most constant." The observations of Herter and Smith to the effect that hydra-headed neurasthenia is closely connected with disturbed intestinal function; those of Eccles and Gautier, suggesting deficient oxidation and incomplete metabolism as bearing a causal relation to many perverted psychoses, together with those of several prominent Continental alienists, all contending that many varieties of mania are so frequently associated with deficient excretion as to suggest a causal relationship; the demonstration by Budin that puerperal fever is due to the death of the *Bacterium coli* and the reabsorption of its toxines in consequence of constipation; the toxic insanity of nephritis described by Jacobson; the association of melancholia with constipation, which probably has come within the observation of us all—these observations, so recent and suggestive, being confirmed by personal experience and investigation, lead me to conclude that many neuroses and psychoses may be traced to autotoxis as a primal cause.

It seems from the deductions of Hamilton that any amount of indican in the urine appreciable by Jaffe's test is suggestive of mental disorder. This substance in urine occurs as one of its normal pigments. When in the urinary passages it becomes changed into indigo blue, it gives to the urine a bluish or bluish-black color, otherwise we do not get it, except when the urine, after standing, putrefies, when we may sometimes recognize it by the bluish shimmer of the residuum on the sides of the test tube, or a bluish film upon the surface of the urine. Chemically, its presence is determined by mixing equal parts of urine and fuming nitromuriatic acid, into which we drop from two to four drops of a concentrated solution of chlorinated potash. Immediately there is formed just beneath the surface a bluish-black cloud of indigo blue.

According to Vierordt, "increase of indican occurs when there is an accumulation of intestinal contents. Hence in occlusion of the intestine from any cause, as peritonitis or obstinate constipation, likewise in severe cachexia, and occasionally in health, we get it. In a series of seventeen cases of melancholia reported by Dr. Dodd, of Bloomingdale Asylum, it was absent in only one case. From my own work I should think it must be quite rare in fresh urine from a healthy subject, as I have been able to find it in only a few cases, notably in those of severe constipation. In one of these, the first of my series of observations, the urine of a lady who suffered much from mental depression, I had suspected no constipation because of the history of regular daily evacuation, until the indican was found; then, bearing in mind Vierordt's assertion, I examined more closely, and, with the fingers of one hand in the hypochondriac region and those of the other deeply between the floating ribs and the ilium, I could push toward the anterior abdominal surface a loaded colon. Daily high colonic flushings, with blue mass and salines, were followed, after several days, by large quantities of blackened fæces, and regular daily movements from that time on, supplemented by sodium salicylate—to my mind the ideal intestinal antiseptic—cured my patient of her mental depression and the constipation at the same time.

In conclusion, I believe that patients not taking bismuth or iron who habitually pass dark fæces, those who for a day or two repeatedly have diarrhœa, and those who have chloasmic spots on the skin, should be thoroughly examined with reference to a possible constipation; that chronic constipation, first pointed out by Sir Andrew Clark as a cause of anæmia, is also a cause of many conditions often considered under the head of other diseases, and improperly treated because the true and underlying cause is not recognized; that in all cases of nervousness and mental troubles constipation and renal insufficiency should be eliminated as causative factors before we rest our diagnosis on some nervous reflex, circulatory disturbance of the nervous centres, or organic disease.

The competent engineer will keep the bearings of his engine well polished, the smokestack, waste pipe, and ash pan free. Fuel and oil alone do not give good work. No more will stimulants, tonics, or aliment in that exceedingly complex mechanism, the human body, suffice. Friction and clogging must be prevented. The "divine spark" must not be allowed to smother in its own carbon, become choked in its own soot, extinguished in its own refuse; and to overlook these matters implies time wasted, energies exhausted, trusts betrayed.*

A NOTE ON TWO NEW CREOSOTE COMPOUNDS: CREOSOTE VALERIANATE AND GUAIACOL VALERIANATE.†

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In these days of new remedies of ephemeral usefulness and evanescent reputation, it is refreshing to take up for brief consideration a drug with an established record of more than half a century. We recall the fact that while experimenting with tar from beech wood, Reichenbach, in 1832, first obtained a fluid substance which, on account of its possessing preeminently the power of preventing putrefaction in organic substances, he termed "creosote," or "flesh preserver." That expert chemist also fully recognized the fact that the new chemical agent was not a simple but a very complex substance, being composed principally of hydrocarbons of the aromatic group. It also contains a variable quantity of water. According to a recent authority, Marasse, it contains phenol, cresol, phlorol, guaiacol, and creosol; also methylcreosol, and the methylic ethers of guaiacol, phlorol, etc. By fractional distillation, Hofmann separated the dimethylic ethers of pyrogallol, of methyl pyrogallol, and of propyl pyrogallol, from that portion of the creosote which passes over at a temperature above 220°. Hofmann discovered a new body, which he named cœrulignol, which possesses powerful toxic properties and which should be carefully removed from creosote that is to be used for medicinal purposes. Its presence may be detected by treating an alcoholic solution of creosote by a test solution of barium hydrate. If cœrulignol is present the solution will turn blue or show a bluish tinge. Benzine may be substituted for alcohol, with the same result. The United States Pharmacopœia has adopted this as one of the tests indicating the suitableness of a specimen of creosote for medicinal use.

I have referred to the early studies of creosote by its discoverer, Reichenbach, in order to bring into marked prominence the fact that it was first obtained from tar from the beech wood, and the early experiments made upon this agent, not only chemically, but also physiologically and clinically, were made with this form of creosote, which is still considered the best for medical use, and which is now used almost exclusively in therapeutics. An analogous substance obtained from coal tar is simply a mixture of phenol and cresylol of variable composition, or, in other words, an impure carbolic acid. They differ chemically principally in the following characters: Creosote from wood tar, added to an equal quantity of glycerin, is precipitated upon the addition of water; added to collodion, it does not coagulate it; and when treated with nitric acid and heat, by Clarke's method, yields oxalic acid. The so-called creosote from coal tar is not precipitated by water from its gelatin solution; it does coagulate collodion, and yields picric acid when treated with nitric acid. There are corresponding and equally well-marked differences between the two compounds in their physiological action, the most important being the comparative innocuousness of pure wood-tar creosote, which can be taken in large doses, not only without toxic symptoms, but with decided therapeutic results.

It has unfortunately occurred that for many years the coal-tar compound was frequently dispensed for creosote, and the latter consequently fell into disrepute for a time on account of the accidents and untoward results from its use. Creosote, according to Dr. H. C. Wood, also, is liable to be adulterated with eupion. In the last edition of the *United States Dispensatory*, by Professors Wood, Remington, and Sadtler, the statement is made that "commercial creosote almost always contains carbolic and cresylic acids from coal tar; and, indeed, much of what is sold for creosote is nothing more than impure carbolic acid." I can not, however, agree with these distinguished authorities in the statement contained in the sentence immediately following the above, which says, referring to carbolic acid, that "this acid strongly resembles creosote, and this resemblance probably extends also to their therapeutical effects, so that the substitution is less to be regretted than might otherwise be the case." This I regard as a most misleading and dangerous teaching. A patient may take as much as six hundred drops of creosote, as in Dr. Freudenthal's case (*Medical Record*, 1892), and recover practically without the use of any antidote; but would this case have resulted so favorably had the same quantity of carbolic acid been swallowed instead of creosote?

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* Some of the data for this paper are taken from notebooks used in the author's reading, extending over a period of years, in which the idea only was recorded, the writer being forgotten. It is thus possible that, in one or more instances, an authority has been quoted verbatim and no proper recognition given in the text. To Dr. Etheridge, of Chicago, and Dr. Hamilton, of New York, the writer would especially acknowledge his indebtedness.

† Read before the Section in Materia Medica, Pharmacy, and Therapeutics of the American Medical Association, June 3, 1897.

The principal constituent of creosote is guaiacol, the methyl ether of pyrocatechin, which is said to be present in the proportion of sixty to eighty per cent. in the best specimens. Guaiacol, in a pure state, is crystalline, but as commonly met with is an oily-looking fluid with a peculiar pungent, smoky odor. It can be obtained, however, in an absolutely pure condition from a commercial sample, by cooling with a mixture of ice and salt, and then separating the crystals which have formed, as stated by S. Winghoffer (*Pharmaceutische Zeitung*, Berlin, 1894).

On account of the liability to adulteration in commercial guaiacol and its variable composition, various compounds have been introduced into the practice of medicine as substitutes for creosote and guaiacol. Among the more prominent of these are the carbonate of guaiacol; guaiacol salol, benzoyl guaiacol, or benzosol; cinnamyl guaiacol, or styracol; guaiacol phosphite, guaiacol biniodide, and most recently the guaiacol valerianate, or geosot. These various compounds are administered with the view of their undergoing decomposition in the intestinal tract and yielding guaiacol at the point where it can be most readily absorbed into the blood-vessels. In this way the administration of chemically pure guaiacol is accomplished more surely than by any other method. Moreover, these compounds, generally speaking, are more agreeable to the palate than the guaiacol itself.

Chemistry.—The following is Dr. Wendt's process for the manufacture of the valerianic-acid esters of creosote, eosote, and geosote:

The description of the process of manufacture and of the physical and chemical properties of these esters can properly be confined for the purpose in question to the esters of the two most important constituents of the wood-tar creosote, the guaiacol and creosol.

To fifteen parts of creosol and twenty parts of valerianic acid seven parts of oxychloride of phosphorus are to be added. The mixture is then gently heated and boiled for the beginning in the water bath, and later on the open flame, until the development of hydrochloric acid has ceased. Afterward the mixture is washed with a three-per-cent. solution of caustic soda, well shaken with benzol, separated from the solvent medium and from water.

The ester represents an indifferent, slightly yellow, oily liquid, and boils in the vacuum (two to three millimetres pressure) between 117° and 121° C. The creosol used in the process is distilled in vacuum (two to three millimetres pressure) for the greater part between 81° to 85° C.

The ester is easily soluble in alcohol, ether, and benzole, and has an aromatic odor.

The process for the manufacture of guaiacol valerianate (geosote) is slightly different:

Five parts of guaiacol are mixed with seven parts and a half of chloride of valeryl and gently heated until boiling occurs, at first over the water bath and later on the open flame, and until the development of hydrochloric acid ceases. Then the mixture is washed with a cold three-per-cent. solution of caustic soda, diluted with benzol, separated from the solvent medium, and exsiccated.

The physical and chemical properties of this ester are practically the same as those of the analogous creosol ester. The boiling point of both of them under the regular atmospheric pressure is stated to be about 260° C. Other compounds of the esters resulting from the process of esterification of commercial creosote with valerianic acid begin to distill at a temperature of about 240° C.

Physiological Action.—The valerianic-acid esters of the wood-tar creosote, especially of the most important constituents—that is, of guaiacol and creosol—are distinguished by their special property of being easily absorbed by the human system, and particularly by the fact that the heart and nerve tonic property of the valerianic acid is entirely preserved in these preparations.

Locally, guaiacol acts like solutions of carbolic acid to produce limited surface anæsthesia. Dr. Newcomb, of New York, at the recent meeting of the American Laryngological Association, recommended a five-per-cent. solution in olive oil as a substitute for cocaine for nasal operations. I have myself used the guaiacol valerianate for this purpose, both in full strength and diluted, and found it to possess, after a slight sensation of heat, decided anæsthetic effects, which are slower in appearing than after the application of cocaine, and which are not followed by secondary hyperæmia. The antiseptic power of guaiacol is also of great value in throat and nose operations. We know of the frequency of the presence of virulent bacilli in the nasal chambers of apparently healthy individuals, and the routine use of detergent remedies, followed by a decided antiseptic, such as guaiacol in oily solution, or the more agreeable valerianate of guaiacol, is now almost necessary in the conduct of our hospital and private work. I should have stated that the valerianate has a strong odor of valerian, which almost masks the guaiacol, and produces a combination the odor of which is suggestive of walnuts. Guaiacol valerianate is a local anæsthetic to the skin when applied in full strength.

The temperature-reducing power of guaiacol, discovered by Sciolla in 1894,* is one of the most remarkable observations in the whole realm of pharmacology. This is not likely to occur in persons of good health with a normal temperature, but it is very marked in conditions of pyrexia. Caporali † has found that the external applications of guaiacol not only relieve pain and reduce abnormal temperature, but also increase the utilization of albuminoids by the organism and the absorption of fat and diminish oxidation.

Administered internally, guaiacol and creosote both exert a powerful antiseptic action upon the contents of the alimentary canal. The temperature reduction appears to be due to a special action of guaiacol upon the peripheral end organs of the nerves in the skin and mucous membranes. Upon the heart and blood-vessels there are no obvious effects from moderate doses of creosote or guaiacol. In larger doses it acts as a cardiac depressant, producing diaphoresis from relaxation of the blood-vessels, also giddiness and a tendency to fainting or collapse, convulsions, or coma, but these disagreeable effects are more likely to occur from commercial creosote or guaiacol than from a chemically pure article. In escaping from the blood by the bronchial mucous membrane and urinary organs, guaiacol exerts a local stimulant and antiseptic action.

From this very brief review of the physiological action of guaiacol I turn to the therapeutic use.

As my time is limited, I will confine my remarks to the guaiacol valerianate and creosote valerianate (for brevity, denominated eosote and geosote) which were recently introduced by Dr. Gustav Wendt, of Berlin, and which I have used, to some extent, for the past three months in private and dispensary practice. For the same reason I will omit notes of cases, and simply summarize some of the results of the use of these agents. Both of them are liquid and have characteristic odors, the guaiacol valerianate being more agreeable to patients than the creosote compound.

In painful affections of the skin, attended by hyperæmia, such as inflamed acne, or abscess in the external auditory canal, pin boils, etc., applications of pure guaiacol valerianate (geosote) relieved pain and checked further pus formation. In chilblains this agent promptly relieved the annoying symptoms. Small compresses wet with guaiacol and applied over the painful spots of Vallein afford almost immediate relief in neuralgia.

In an acute erythema of the face, apparently erysipelatous, but possibly the result of rhus poisoning, a single application of this agent for ten minutes, followed by applications of zinc ointment containing creosote (one drachm to the ounce), afforded immediate relief and prompt disappearance of the inflammation. In the cases of children, however, or where larger areas are involved, the antithermic effect should be borne in mind, and not more than twenty-five to thirty drops applied at one time. I have already alluded to the use of guaiacol valerianate in the treatment of affections of the nose. In acute rhinitis it should be diluted with three or more parts of oil of sweet almonds, or liquid albolene, and in this form it acts as a protective as well as an analgetic and antiseptic application. In chronic rhinitis, especially the purulent form, as well as in some varieties of atrophic rhinitis, it is used in full strength with advantage, as many of these cases are kept up by the presence of virulent micro-organisms, the action of which is inhibited by the guaiacol. In ulcerated conditions, even of supposed tuberculous origin, a few applications of pure guaiacol or creosote valerianate materially promote the healing process, at the same time relieving pain. This observation also applies to the larynx. I have not yet employed it in lupus, but it might be of service here for its local anæsthetic effects, prior to scraping and the application of lactic acid and the subsequent use of a twenty-per-cent. guaiacol spray, as recommended by Dr. P. Watson Williams.* In tuberculosis of the air-passages external applications of pure guaiacol have been recommended by Dr. J. Solis-Cohen and others, and for this purpose the valerianate (geosote) would have especial advantage. Internally, guaiacol valerianate is given either in milk or dilute alcohol, or, better, in the form of capsules. It checks bronchorrhœa and reduces the number of tubercle bacilli in the sputum, at the same time that it tends to prevent reinfection from the intestinal tract. It is well borne in moderate doses, ten to thirty minims daily, or one to three capsules, each containing two grains, or three minims and a third, three times a day.

In the treatment of gastric catarrh, chronic gastritis with gastrectasia, and other conditions associated with or producing fermentation of the contents of the stomach, I have used creosote valerianate (eosote) in preference to the guaiacol valerianate (geosote), as I believe it to exert stronger antiseptic action. It also overcomes nausea, and in connection with lavage favors return to a healthy condition of the mucous membrane and the reestablishment of appetite and normal digestion.

Fifty years ago Dr. Fahnestock † used pure creosote as an application to erysipelas with remarkable success. I have already referred to the use of guaiacol valerianate as a local application for erythema, and would suggest its use as a topical agent in erysipelas and also in smallpox.

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* *Cronica di clin. med. di Geneva* for 1894, vol. i, p. 171.

† *Riforma medica*, Naples, No. 175, 1894.

* *Medical Annual*, London, 1897.

† *American Journal of the Medical Sciences*, 1848.

In cases of pulmonary phthisis the remedy has been well borne, but I have had it too brief a time under observation to report decided results. Very favorable results, however, have been observed by Dr. Rieck, of Bassum, Germany,* who reports increase of appetite and powers of digestion, and of physical strength under its use. In cases of the initial stage of tuberculosis of the lungs this improvement was quite marked, with a decided diminution of the cough; the expectoration not only became more free, but it also decreased steadily in quantity. The night sweats disappeared.

This report was based upon the study of twenty-three cases (sixteen of catarrh of the apices and seven of developed tuberculosis) which were markedly benefited.

I have found the guaiacol valerianate (geosote) of decided value in the treatment of the so-called catarrhal state which is sometimes considered as the pre-tuberculous stage of phthisis pulmonalis. It seems especially suited, when properly diluted with some bland oil, for intratracheal injection in cases of advanced phthisis with or without ulceration in the larynx or cavity in the lung.

Inhalation of creosote in combination with oil of peppermint is alleged by Dr. Carasso to cause a disappearance of the tubercle bacilli from the sputum, and he reports good results, clinically, after nearly ten years' experience with it. Certainly this form of aerial medication is worthy of extended trial, and guaiacol valerianate would be preferable to creosote for this purpose.

I am of the opinion that in guaiacol we have the best remedy known at present to counteract the pernicious activity of the tubercle bacillus, and I may repeat the words of Dr. Jacobi: "No one treatment of all forms of tuberculosis ever satisfied me to the same degree as has that of guaiacol." When introduced into the stomach the guaiacol valerianate is decomposed and the effects of pure guaiacol, with the sedative action of valerianic acid, are obtained simultaneously, which may be expected to have a favorable effect upon the nervous manifestations of the disease, reducing cough and restlessness. In pneumonia, Malderesco used applications of guaiacol to the thorax, posteriorly, over the affected area of lung, with reduction of temperature and a diminished mortality.

I have thought that these few notes on a recent form of an old remedy might be of interest to the members of the section, and I beg to present, for their inspection, samples of the guaiacol valerianate (geosote) and creosote valerianate (eosote), the valerianic-acid esters of guaiacol and of creosote respectively. For further and more detailed information I may refer those interested to reports from the medical clinic of the Royal Charity Hospital, of Berlin, by Dr. Grawitz, and of Dr. Rieck, already referred to, which have appeared in the *Deutsche Medizinal-Zeitung* and the *Therapeutische Monatshefte* for 1896.

Therapeutical Notes.

A Collyrium for Ophthalmia Neonatorum.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 8th gives the following formula:

℞ Hydrastine sulphate, Boric acid, Sodium biborate, Tincture of opium,	each........	1 part;
Distilled water....................		100 parts.

M. A few drops to be instilled into the eyes every hour. In the intervals the eyes may be irrigated with warm boiled water and a little vaseline applied to the edges of the lids.

Potassium Dichromate in the Treatment of Warts.—Louvel-Dulongpré (*Progrès médical,* July 31st) recommends this remedy for warts in man and the domestic animals as painless and leaving no scar. It is sufficient to paint the warts once a day with a saturated solution in boiling distilled water. When the solution cools, a certain amount of the dichromate is precipitated. The supernatant liquid is to be decanted and used cold. A single application has sufficed to cure a horse whose nostrils were covered with warts. As this part of the animal's integument is very delicate, total desquamation took place as the result, but the fine hairs covering it were regenerated and there was no scar.

The Iodine Treatment of Trachoma.—Pylkow (*Vratch,* 1897, No. 19; *Therapeutische Wochenschrift,* August 1, 1897) has tried Niesnamow's treatment in forty-six cases. The conjunctiva is painted daily with an ointment containing from one and a half to two parts of iodine in a hundred parts of vaseline. He thinks the treatment has only the advantage of ease of application.

Formalin as a Remedy for Insect Bites.—Gouin (*Petit moniteur de pharmaceutique,* 1897; *Pharmaceutisches Centralblatt; Wiener medizinische Blätter,* August 5, 1897) recommends repeated applications of formalin. He says it allays the smarting at once, and the skin does not become inflamed, although it undergoes a parchmentlike hardening.

The Treatment of Eczema.—Petersen (*St. Petersburger medicinische Wochenschrift,* 1896, No 45; *Monatshefte für praktische Dermatologie,* August 1, 1897) treats acute eczema with Lassar's paste or, if the secretion is copious, one of the following ointments:

(1.) ℞	Lead acetate..............	1 to 2 parts;
	Venetian talc	25 to 30 "
	Yellow vaseline, enough to make....................	100 "
M.		
(2.) ℞	Alum....................	1 to 3 parts;
	Venetian talc...........	25 to 30 "
	Yellow vaseline, enough to make....................	100 "
M.		

After the disappearance of the vesicles gelatinous preparations of zinc may be employed. White-precipitate ointment or a lead ointment is applied to hairy parts. In cases that resist this treatment we must seek for internal causes. Neurasthenics are often affected with eczema, and for them hydrotherapeutics is useful. For chronic eczema the author employs baths, hot compresses, and tar ointments. He seldom orders arsenic, but thinks sodium salicylate and salol are serviceable.

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* *Deutsche Medizinal-Zeitung,* Berlin, December 24, 1896.

Compression of the Sciatic Nerve for the Cure of Sciatica.—Arullani (*Gazzetta medica di Torino*, 1897, Nos. 13 and 14; *Deutsche Medizinal-Zeitung*, August 12, 1897) reports that, of forty cases treated by compression, as first employed by Negro in 1895, thirty-two have been perfectly cured, two improved, and six not affected. To do away with the inconvenience of digital compression, he has devised an apparatus for compressing the nerve, which can be fixed to the bedstead or to the examining chair.

Tropacocaine Hydrochloride.—The *Therapeutische Wochenschrift* for August 1st gives the following formulas:

℞	Tropacocaine hydrochloride...	4½ grains;
	Sodium chloride.............	$\frac{9}{10}$ of a grain;
	Distilled water..............	150 grains.

M., filtra. S.: For topical use in ophthalmic practice.

℞	Tropacocaine hydrochloride...	3 grains;
	Sodium chloride.............	$\frac{45}{100}$ of a grain;
	Distilled water..............	75 grains.

M. S.: Ten drops as an injection in dental practice.

℞	Tropacocaine hydrochloride...	15 grains;
	Sodium chloride.............	$\frac{9}{10}$ of a grain;
	Distilled water..............	150 grains.

M. S.: For pencilling in dental practice.

The Administration of Alcoholics to Children.—Comby (*Journal de médecine de Paris*, August 1st) remarks that spirits and even wine should never be given undiluted to children. He gives the following formulas for their dilution:

(1.)	℞	Brandy or rum................	1 part;
		Gum julep.....................	6 parts.

M. S.: A teaspoonful every hour.

(2.)	℞	White wine, Malaga, or Port....	5 parts;
		Syrup of orange flowers........	1 part;
		Distilled water................	10 parts.

M. S.: A tablespoonful every hour.

(3.)	℞	Old brandy....................	3 parts;
		Syrup of cinchona.............	2 "
		Distilled water................	10 "

M.

(4.)	℞	Wine of cinchona..............	4 parts;
		Syrup of bitter-orange peel......	2 "
		Distilled water................	8 "

M.

(5.)	℞	Extract of cinchona...........	2 parts;
		Sherry........................	40 "
		Syrup.........................	20 "
		Distilled water................	80 "

M.

The Treatment of Sycosis Vulgaris.—Frèche (*Annales de la Polyclinique de Bordeaux*, 1896, No. 7; *Deutsche Medizinal-Zeitung*, August 2, 1897) recommends pencilling with a one-per-cent. alcoholic solution of corrosive sublimate in rebellious cases, after the manner of Tilé. At night the affected area should be dressed with an ointment containing five per cent. of resorcin and ten per cent. of tar.

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NEUROTIC SPANOPNŒA AND TACHYPNŒA.

Retarded respiration and accelerated respiration of a neurotic nature have lately been made the subjects of investigation by Strübing (*Zeitschrift für klinische Medicin*, xxx, 1 and 2; *Centralblatt für innere Medicin*, July 17, 1897). He remarks on the complicated action of the cerebrum, not yet explicable, upon involuntary respiration and upon the development of those nervous forms of respiration which, being of reflex origin, are to be referred to irritation of peripheral nerves. In the case of a neurosis, with changed conditions of excitability, something besides the ordinary physiological laws must come into play—abnormal excitability of the centres, hyperæsthesia of the peripheral nerves, and corresponding pathological reflex processes—as in hysterical cough, in certain forms of spasm of the glottis, and in pseudo-asthma. By means of clinical histories he illustrates the chief types of the nervous disturbances of respiration which are brought about by hysteria, by neurasthenia, and by organic diseases of the nervous system that increase irritability. If the lungs and heart are healthy, he says, the dominant and never-failing symptom is *besoin de respirer* occurring in paroxysms; the breathing is retarded or hastened during the seizure, the relation of inspiration to expiration may be deranged, with severe sensations of anxiety, occasionally ushered in by an aura, there may be paræsthesia of various kinds in the larynx, the neck, and the thorax, and, if a nasal affection is the cause of the attacks, there may be manifestations of aprosexia.

If respiration is delayed, the respiratory movements are very forcible, the auxiliary muscles being called into play, even to the extent of dyspnœa, and the agony of the situation is depicted in the patient's face. In one of two cases of which the histories are given there was a neurosis of the superior laryngeal nerve, excessive irritability of the fibres that inhibit respiration. That this was directly caused by a preceding laryngitis the author thinks less probable than that it was due to the irritation of a uterine affection, for the cure of the latter was quickly followed by recovery. The act of swallowing sufficed to cut short the paroxysm. In the other case, analogous but not so severe, irritation of the trigeminus caused constrained breathing; chronic rhinitis was present, and indigestion brought on the attack.

Opposed to this inhibitory neurosis, spanopnœa, is tachypnœa occurring in paroxysms, but not accompanied by a feeling of dyspnœa, except in its pronounced forms. Whether this is due to depression of the inhibitory mechanism or to irritation of the accelerator nerves of respiration can not yet be determined, but that pathological irritation of the terminal expansions of distant nerves may give rise to such a tachypnœa seems to be exemplified by one of the cases.

MYOGENIC CONSTIPATION IN WOMEN.

The name of *constipatio myogenita seu muscularis mulierum chronica* is bestowed by L. Pincus (*Archiv für Gynäkologie*, liii, 3; *Therapeutische Wochenschrift*, July 25, 1897) on a form of chronic constipation due to weakness of the accessory muscles of defæcation in women. The weakness is most commonly caused, he says, by injury of the pelvic floor in childbirth, but it may also appear in the form of congenital or acquired feebleness of the muscles of the abdominal wall —generally acquired. As regards the connection between constipation and disease of the genital apparatus, in the great majority of cases the genital lesion is the primary one, and it reacts upon the intestine in a reflex manner. Besides true myogenic constipation, which is the real subject of his article, Pincus mentions another form to be imputed to what he terms *myodynia et myasthenia intrapelvica sexualis* having its point of departure in the nerve centres of the organs of generation.

The peculiar chronic myogenic constipation of women, according to Pincus, is brought about in the following manner: In the normal act of defæcation, not only the smooth muscular fibres of the intestine, but also the striated fibres of the levator ani are stimulated by the fæcal masses that enter the intraperitoneal portion of the rectum. This is brought about in a reflex way, and in the same manner the action of the abdominal muscles is brought into play to prevent the retreat of the fæces upward. Stimulation of the inhibitory centre of the sphincter is initiated in a reflex manner by the pressure of the fæcal masses upon the muscle, and then a voluntary effort follows and the sphincter gives way. If the contractile energy of the levator is impaired, the reflex stimulation that should induce the bearing-down action of the abdominal muscles is lessened. If those muscles also are weak, it is the peristaltic movement of the rectum almost unaided that has to cause the relaxation of the sphincter, and the additional work thus thrown upon the muscular fibres of the rectum leads finally to the pathological result of their atony.

Perineal injuries do not always involve lesions of the pelvic diaphragm or, in the majority of instances, even of the skin. But it is not necessary that lesions affecting the function of the levator ani should be directly traumatic; ischæmic influences may be at work. As regards the diagnosis of lesions of the levator ani, the cleft between the nates will be found shallow, and, on voluntary contraction of the muscles, the anus will be but little if at all drawn forward toward the pubic symphysis. When the patient bears down the perinæum will project. On palpation of the pelvic floor, breaches may be felt in the muscular structure.

From the prophylactic point of view, care must be taken to preserve the pelvic diaphragm as intact as possible and to procure good involution of the abdominal wall. As regards the last-mentioned item, Pincus deprecates the retention of the abdominal binder for too long a time, for it may lead to atrophy of the abdominal muscles by reason of their inactivity. He sets down two months as the limit allowable. To promote involution during the puerperal period, he recommends brief but energetic contractions of the abdominal muscles, direct massage, faradization, the application of bags filled with pebbles or sand of gradually increased weight, and that of moist potters' clay, which, besides acting by its weight, has also the effects of the Priessnitz compress.

The special treatment is largely expectant, and a great point is that of weaning the patient from the use of purgatives. It is a *sine qua non* that there should be no inflammatory manifestations in the pelvis or around the intestine. For women with overactivity of the pelvic muscles Pincus recommends a bromide, from fifteen to forty-five grains a day for a fortnight, and a daily asafœtida enema or belladonna suppository; for those with overactive abdominal muscles he employs sand bags or masses of clay kept on for from an hour to three hours. If intestinal putrefaction is pronounced and persistent, the intestine is to be emptied thoroughly with castor oil and enemata of a seven-to-a-thousand solution of salt. In mild cases contractions of the pelvic floor suffice to do away with the need of purgatives; in severe cases, before wholly discontinuing the use of laxatives, especially enemata, there should be a preparatory treatment of the muscles of the pelvic floor and of the abdominal wall with gymnastic exercises. Among these are included retractions of the pelvic floor, electrical massage of the same structure, elevations of the breech, forcible closure of the knees, and massage of the abdominal wall and of the intestine.

If there is notable pain, the intestine must be emptied at once by means of a large enema of oil. The duration of the treatment may be shortened by the patient's betaking herself to the closet at stated hours, and regulation of the diet will count for a good deal.

CELLULOID AS A SPLINT MATERIAL.

Sheet celluloid has been employed as a splint material to some extent, and has proved reasonably satisfactory. About a year ago Landerer and Kirsch, of Stuttgart, extended the use of celluloid by employing it in solution in acetone. The process was described at the time in the *Centralblatt für Chirurgie*, and a condensed account of it was given in this journal. Since that time Maass, of Berlin, has made nearly a hundred corsets and the like by using the celluloid solution, and he lately described the process and demonstrated the advantages of the celluloid dressing at a meeting of the Berlin Medical Society (*Wiener medizinische Blätter*, July 15, 1896). A solution of the thickness of syrup is made by immersing scrap celluloid, which is cheap, in acetone and agitating the vessel from time to time, several days being consumed in the process of making the solution. A plaster-of-Paris cast of the part to which the corset or splint is to be applied is wound with strips of thin muslin, and over this the solution is applied and rubbed in; then another layer of muslin is wound on and more of the solution applied, and so on until there are six or eight alternate coats of muslin and celluloid. In a few hours the coating feels firm, and on the following day it may readily be removed from the cast.

The oldest of the corsets made by Maass according to this process have been in uninterrupted use for ten months, so that he feels qualified to pronounce upon their advantages. Such a corset presents a neat appearance and is extraordinarily light, weighing not more than half as much as one made of water-glass and not more than a quarter as much as one of plaster of Paris. With this lightness it combines great firmness, so that for ambulant patients it does not require to be strengthened with strips. On account of its elasticity, it is easy to put on and take off. Its durability is almost unlimited. Moisture does not affect it in the least; even with profuse perspiration or suppuration it remains quite intact. But its greatest advantage is in the simplicity of its construction; not only the application of a rough shell, but also that of a tidy and sightly corset is so easy that it can be done by any physician. It is easily bent, cut, padded, and trimmed, and it may be fortified by using more of the solution. If it does not fit well in any particular place, it may be altered by manipulation after it has been rendered more flexible by warming it slightly. As to the danger from its ignition, that is not great; it burns readily, but not explosively or with such rapidity as ordinary clothing, as Maass has repeatedly satisfied himself.

MINOR PARAGRAPHS.

OVARIINE AS A REMEDY.

Bodon (*Orvosi hetilap*, 1896, No. 42; *Centralblatt für Gynäkologie*, August 7, 1897) reports three cases in which he has employed Merck's ovariine tablets. The first was that of a nullipara, twenty-five years old, who had been subjected to double ovariotomy six months before. There had been no menstruation since, and for four months she had suffered with sleeplessness, loss of appetite, vomiting, severe headaches, and dizziness. She was directed to take two tablets on the first day, four on the second, and six daily thereafter. Improvement began on the second day, and in two weeks she was entirely cured. The second case was that of a nullipara, forty-seven years old, whose menopause had occurred two months before. She had nervous symptoms, the so-called molimina climacterica. Four tablets a day—she could not bear more—soon cured her. The third case was that of a virgin, eighteen years old, who had suffered with epilepsy since her first menstruation and had been under treatment for years. Bromides and other drugs had proved utterly futile. She began with one tablet daily and increased the number to ten. In the course of several months the attacks ceased. Discontinuance of the use of the drug was followed by fresh seizures, and its resumption caused their subsidence again.

GONORRHŒA AND PUERPERAL FEVER.

Concerning mild cases of gonorrhœal infection of women from the chronic latent gonorrhœa of men, Fritsch (*Zeitschrift für praktische Aerzte*, 1897, No. 1; *Centralblatt für Gynäkologie*, August 7, 1897) remarks that if only the uterine mucous membrane is affected and the circumstances are favorable, especially if the discharge has free egress, the trouble may be very transitory. In such a case, however, it must be borne in mind that it may give rise to some fever and abdominal pain during the lying-in period without any traumatic infection. The diagnosis depends on finding the gonococci, and they are most apt to be found in the cervical secretion. When they are discovered, the use of vaginal injections should be begun at once, during gestation if possible. The best agent is silver nitrate (1 to 2,000); among the milder ones are aluminum acetate (1 to 10), zinc sulphate, etc.

A PECULIAR CASE OF JAUNDICE.

At a meeting of the Paris Société médicale des hôpitaux held on the 14th of May (*Annales de dermatologie et de syphiligraphie*, July, 1897) M. Hayem showed a dyspeptic who had a generalized chamois-yellow coloration quite different from the ordinary icteric tint and suggestive of that of xanthoma. It was most marked on the hands, particularly on the palms and in the epidermic thickenings bordering on the flexures of the fingers. The conjunctivæ and the other mucous membranes were hardly tinted at all. The urine contained no bile pigment, but the serum did show the presence of such pigments; so the case must really be one of icterus.

THE EFFECTS OF LOSS OF A PERIPHERAL PART ON THE CENTRAL NERVOUS SYSTEM.

At a recent meeting of the Paris Société médicale des hôpitaux (*Progrès médical,* July 31st) M. Gilbert Ballet reported upon researches he had made in regard to this subject. He had observed the usual well-known atrophies, but he had sought particularly to ascertain what had happened to the cells of medullary centres corresponding to the nerves of amputated limbs. Using Nissl's method, he had found no lesions of such cells. Experimentation had constantly shown such changes soon after amputation, but in the case of his subject the amputation had been done three years before; so we might suppose that after a certain length of time the cells were repaired.

GASTRIC PAINS DUE TO A PESSARY IN THE VAGINA.

Wiktor (*Wiener medizinische Blätter,* 1897, No. 17; *British Medical Journal,* August 7, 1897) relates the case of a widow, forty years old, who for four years had suffered with severe gastric pain. On the removal of a pessary of vulcanite, about three inches in diameter, which had been introduced into the vagina thirteen years before, and never been removed, a circumscribed area of vaginal inflammation was disclosed, together with an inflammatory patch on the cervix uteri. After a fortnight of antiseptic treatment of the genitals the pain in the stomach disappeared entirely. The pessary had not caused any symptoms referred to the genital organs.

A MUSICAL MITRAL MURMUR.

Monari (*Gazzetta degli ospedali e delle cliniche,* 1896, No. 61; *Centralblatt für innere Medicin,* August 7, 1897) records a case in which a rough systolic murmur at the apex, which replaced the first sound, was propagated to the region of the stomach in the form of a pure musical sound, but only if the stomach was moderately filled with food or gas; if it was empty or overdistended, although the murmur was still to be heard, it had no musical character.

ONE OF THE DISADVANTAGES OF SHELLAC VARNISH AS A TIPPLE.

Shellac varnish has an agreeable odor; how it tastes we do not know. It is plentifully alcoholic, and that quality it is probably that occasionally leads an unwary workman to drink it. Whatever its good points as a tipple may be, it has one drawback, the tendency to lead to the formation of masses of shellac in the stomach. Vonnegut (*Deutsche medicinische Wochenschrift,* 1897, No. 26; *Wiener klinische Wochenschrift,* July 29, 1897) reports the case of a man from whose stomach two such concretions, weighing together about twenty-one ounces, were removed by gastrotomy, and refers to a case of Friedländer's in which a like concretion that weighed thirty ounces was found in the stomach after death.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 31, 1897:

DISEASES.	Week ending Aug. 24.		Week ending Aug. 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever...............	33	5	34	6
Scarlet fever................	79	1	59	3
Cerebro-spinal meningitis.....	0	0	1	0
Measles.....................	73	4	34	2
Diphtheria..................	135	15	116	20
Croup......................	2	1	3	0
Tuberculosis................	186	79	181	110

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the Marine-Hospital Service during the week ending August 28, 1897:

Small-pox—United States.

Memphis, Tenn...........	Aug. 15–21.........	1 case.	

Small-pox—Foreign.

Montreal, Canada.........	Aug. 20–26.........	1 case.	
Warsaw, Russia..........	Aug. 1–7...........		5 deaths.
Para, Brazil..............	July 24–Aug. 7......		2 “
Odessa, Russia...........	Aug. 1–7...........	1 case.	
Hong Kong, China........	July 3–31..........		1 death.
Moscow, Russia...........	July 24–31.........	4 cases,	1 “
St. Petersburg, Russia.....	Aug. 1–7...........	10 “	2 deaths.
Madras, India............	July 17–23.........	3 “	1 death.
Bombay, India...........	July 20–27.........		2 deaths.

Cholera.

Calcutta, India............	July 10–17.........		38 deaths.
Kioti Fu, Japan...........	July 20–Aug. 3......	1 case.	
Tokyo Fu, Japan.........	July 20–Aug 3......	13 cases,	3 “
Chiba Ken, Japan.........	July 20–Aug. 3......	4 “	3 “
Fukuoka Ken, Japan......	July 20–Aug. 3......	2 “	2 “
Kanagawa Ken, Japan.....	July 20–Aug. 3......	7 “	5 “
Okinawa Ken, Japan......	July 20–Aug. 3......	1 case,	1 death.
Shiga Ken, Japan.........	July 20–Aug. 3......	1 “	1 “
Tochigo Ken, Japan.......	July 20–Aug. 3......	1 “	1 “
Yamaguchi Ken, Japan....	July 20–Aug. 3......	1 “	1 “
Hong Kong, China........	July 3–31..........	5 cases,	2 deaths.
Colombo, Ceylon..........	July 3–17..........	4 “	4 “
Madras, India............	July 17–23.........	4 “	4 “
Bombay, India............	July 20–27.........		84 “

Yellow Fever.

Para, Brazil..............	July 24–Aug. 7......		2 deaths.
Rio de Janeiro, Brazil.....	July 3–10..........	2 cases.	
Panama, U. S. of Colombia.	July 27–Aug. 3......	13 “	5 “
Cardenas, Cuba...........	Aug. 7–14..........		1 death.
Matanzas, Cuba...........	Aug. 11–18.........		7 deaths.

Plague.

Formosa, Japan...........	July 20–Aug. 3......	1 case.	
Bombay, India............	July 20–27.........		14 deaths.

The Canadian Medical Association.—The thirtieth annual meeting, held in Montreal on Monday and Tuesday, August 30th and 31st, was well attended, and important matters were discussed, chiefly connected with the question of interprovincial registration. All but two of the provinces seemed to be in favor of the scheme, and it is thought that legislation favorable to the establishment of uniform requirements throughout the Dominion will soon be secured. A noteworthy feature of the proceedings was the excellent address by the president, Dr. V. H. Moore, of Brockville. It was voted to hold the next annual meeting in Quebec.

The Mississippi Valley Medical Association.—Dr. W. H. Loeb announces that arrangements are about completed for the twenty-third annual meeting, which is to be held in Louisville on October 5th, 6th, 7th, and 8th. The different passenger associations have granted a round-trip rate of one fare and a third on the certificate plan. The sessions are to be held at the Liederkranz Hall, and the headquarters are to be at the Louisville Hotel. All those desiring to take part are requested to send the titles of their papers to Dr. Thomas Hunt Stucky, Louisville, Ky., or to Dr. W. H. Loeb, St. Louis.

The British Medical Association.—As we go to press, the attendance at the Montreal meeting is sufficient, we think, to warrant our Canadian friends in feeling satisfied with the meeting. At the time of writing, about fifty invited Americans had registered, and as many as could have been expected from Great Britain were present.

Goat's Milk and Goat's Serum.—Dr. W. Thornton Parker, of Groveland, Massachusetts, would like to know the experience of our readers in the treatment of wasting diseases with goat's milk, also their opinion as to the antitoxic effect of goat's serum in tuberculosis, diphtheria, etc.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 22 to August 28, 1897:*

Carter, W. F., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about September 1st.

Cleary, Peter J. A., Major and Surgeon, is granted leave of absence for three months, with permission to go beyond sea.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending August 28, 1897:*

Rothganger, G., Passed Assistant Surgeon. Detached from the U. S. Steamer Wheeling and ordered to the U. S. Steamer Marietta, September 2d.

Wheeler, W. M., Assistant Surgeon. Detached from the U. S. Steamer Marietta and ordered to the U. S. Steamer Wheeling, September 2d.

OBITUARY NOTES.

Edward M. Kitchell, M. D.—Dr. Kitchell, a son of Mr. James T. Kitchell, of Woodside, Newark, N. J., met with a fatal accident on Tuesday evening, August 24th. He fell from a balcony at his father's summer home, at Hulett's Landing, Lake George, and sustained a fracture of the spine. It was hoped that an operation, if performed promptly, might save his life, and he was taken to the Roosevelt Hospital, in New York, as soon as possible, but on his arrival his condition did not admit of the operation, and he died soon afterward, at 12 p. m., August 25th. Dr. Kitchell was twenty six years old, a graduate of Columbia University, and for four years past an assistant instructor in histology at the College of Physicians and Surgeons (Medical School of Columbia University), under Professor Prudden. He was the author of several papers on subjects connected with his line of work.

Births, Marriages, and Deaths.

Married.

Jones—Franing.—In New York, on Wednesday, August 25th, Dr. William T. Jones, of Vallejo, Cal., and Miss Elizabeth Franing.

Rush—Winkler.—In Charleston, S. C., on Wednesday, August 18th, Dr. Charles Aiken Rush, of High Springs, Fla., and Miss Katie Marie Winkler.

Died.

Adams.—In Hackensack, N. J., on Tuesday, August 24th, Harold B. Adams, only son of Dr. Charles F. Adams.

Barnum.—In New Orleans, on Saturday, August 28th, Wilhelmine Louisa Colton Barnum, wife of Dr. James W. Barnum.

Letters to the Editor.

HYDROZONE AND GLYCOZONE IN THE TREATMENT OF GONORRHŒA.

Prescott, Arizona, *August 16, 1897.*

To the Editor of the New York Medical Journal:

Sir: My attention has been attracted to an article published in your journal for July 3d, by Dr. J. A. Silverman, of Butte, Montana. The writer states that no antiseptic has been discovered that will destroy the gonococcus without doing injury to the mucous membrane. As I presume that he is open to conviction, I submit to you for publication the following report of three cases which I have successfully treated during the last few months with hydrozone and glycozone, which I consider not only harmless but the most powerful healing agents that I have ever used in my practice of thirty-five years.

Case I.—A man called on me on June 20th, with gonorrhœa of four weeks' duration, with profuse discharge, micturition painful, and an acute burning sensation along the entire urethral tract. Pus sacs had formed in the canal, the meatus was inflamed, and the gonococcus was active, as determined by microscopical examination. I prescribed injections of one part of hydrozone and ten parts of sterilized lukewarm water, an ounce for each injection, four times daily. After two days I reduced the proportion to one part of hydrozone and fifteen parts of lukewarm water, and I directed glycozone mixed with an equal amount of glycerin pure to be injected on his going to bed. The diet was not restricted, but no stimulants were permitted. In two days no gonococcus could be detected. The discharge was lessened, the pain and difficulty in micturition had ceased, and in twelve days the patient was well. Continence was imposed for two weeks. Doses of bromide of potassium and bicarbonate of sodium were administered from time to time in order to make the urine alkaline and quiet the patient.

Case II.—A married man had contracted blennorrhœa from a woman who had the whites. The same treatment was ordered, and with such satisfaction that the woman also was brought for examination and treatment. Result, a cure in each case within three weeks.

Case III.—A man, fifty years old, contracted gonorrhœa from a woman of the town. As the patient lived in the country, twenty miles out, no treatment was given until ten days after infection. Aggravated symptoms of gonorrhœa were present, and there was chordee every night; the patient, to use his own expression, was "plumb wild." The hydrozone injections were ordered, one part to twenty, owing to the great sensitiveness of the urethra and the possibility of orchitis if a stronger injection was used, as there was a slight swelling of the testicles. The glycozone, diluted with equal parts of pure glycerin, was ordered at night. I also gave glycozone internally in medicinal doses, to allay a gastric disturbance due to nervousness. In this case the treatment was continued for twenty-five days. I sent my patient to his cattle ranch happy.

WARREN E. DAY, M. D.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Congress, held in Washington, D. C., Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. CHARLES H. KNIGHT, of New York, in the Chair.

(*Continued from page 301.*)

Remarks on Treatment of Chronic Affections of the Faucial Tonsils.—Dr. J. W. GLEITSMANN, of New York, read a paper on this subject. (See page 317.)

Dr. FARLOW: At the meeting of this association in Rochester two years ago I read a paper in which I advocated the use of the punch for removing diseased tonsils which did not project beyond the pillars of the fauces. Soon afterward I received a marked copy of a medical journal containing an unsigned editorial which said that the removal of a tonsil which did not project was meddlesome surgery. I am unable to see why a diseased tonsil should be allowed to remain just because it happens to lie behind the anterior pillar. The latter simply makes the manner of removal different from, and often much harder than when the tonsil projects so as to be easily grasped by the guillotine.

It seems to me that the instrument presented by the reader would be better if the handle were longer. As to the direction in which the jaws of the punch open, it is not necessary to have instruments which open at different angles, as it suffices to turn the handle vertically or horizontally to cut in either direction. The punch which I show you, and which I now use, is different from his, and I have come to the conclusion that it should be as strong as this to cut the dense tonsillar tissue. I also show you a punch which I got in London, but which I have not found strong enough.

In some cases, instead of using a palate hook to pull back the anterior pillar, I have used the ordinary tongue depressor, with the edge of the blade pressing down the tongue, and the end can then be used in pulling the anterior pillar back from the tonsil; thus using only one instrument beside the punch. I have found that the cutting of the tonsillar fold is much more painful than the tonsil, and is much sorer afterward. I agree thoroughly with Dr. Gleitsmann as to the importance of these cases, and think that they often escape notice unless carefully and thoroughly examined. I have here a few knives of different shapes, which I have found useful in opening up the diseased crypts.

Dr. W. H. DALY, of Pittsburgh, Pennsylvania: I am of the opinion that the faucial tonsil is not necessarily a part of the normal throat, and if it extends beyond the pillars of the half arch it ought to be excised back as far as the half-arch pillars.

In listening to the troubles recounted by the various gentlemen about instruments for these operations I must also enumerate one trouble more, a very glaring one, and that is the instruments themselves. We have entirely too many instruments; many of them are mere toys; even the amygdalotome is not a necessary instrument. There is no operation upon the tonsils which may not be well done with two knives curved upon their flat surface and of proper length, a rat-tooth forceps, and a tongue depressor. I say this advisedly, and after considerable experience with these instruments, and a dexterous operator can do the neatest possible operation in abscission of the tonsils with them, which is not always possible with the amygdalotome.

Now with regard to these cases of hypertrophy of tonsil, which have the crypts filled with cheesy matter, with possibly fifty to eighty points, more or less, of deposit, and the connective tissue all absorbed, so that there is little more than a diseased mass of network of fibrous tissue, and this mass is in all effects like a foreign body. The only right thing to be done is to get the patient as quickly as possible prepared for an operation, and then, after antiseptic precaution, dissect out the tonsils carefully, leaving the throat in a normal, or as nearly a normal condition anatomically as the condition will admit of.

Dr. GLEITSMANN: I am very glad to have heard the criticism of my paper as well as of the instrument presented, although I am decidedly at variance with some remarks made in the discussion. When Dr. Farlow considers the instrument not strong enough to excise the tissue to be removed I must answer that it cuts as well and accurately as Heryng's double curettes and Ruault's forceps, both of which I have made use of in the case described before my clipper was finished. I did not experience the least difficulty in cutting through the fold, and was rather surprised at the ease of its removal, when compared with the awkward position in which Ruault's instrument had to be introduced when desired to cut horizontally, for which purpose it was not devised.

In regard to Dr. Daly's remarks, I may say that I have always hesitated to introduce new instruments, and I agree with him that there are too many already. But I do not consider instruments superfluous or discourage new devices when they are apt to facilitate our work. I have not said for my clipper that it was anything but a modification of Ruault's forceps, which is applicable when there is not enough tonsillar tissue left to use the amygdalotome, and when the symptoms warrant a removal of the offending tissue—in the instance described, of a vertical fold covering the diseased tonsil. Excision of the tonsil is here out of the question, as there is no actual hypertrophy present. Other means can be employed—for instance, curved scissors, as cited by Allen —but a quicker and more satisfactory result will be achieved by an instrument constructed on the principle described in my paper.

Exhibition of Cases.

A Neoplasm of the Nasal Fossa.—Dr. J. H. BRYAN: I take the opportunity of bringing before you this young man, twenty years of age, who is suffering with a growth in the left nostril, causing some projection of the nasal bone externally and extending backward into the nasopharynx; occluding the left posterior naris entirely, and nearly occluding the right also. In exhibiting this case, I feel somewhat embarrassed in presenting him in the shape in which he now is. I expected to show him and the tumor separately. But having made several attempts at removal of this mass without success, having failed to get the wire of the galvanic snare around its base on two or three occasions, I desire to bring him before you, hoping to receive some suggestions as to how best to remove it. He has had this growth for several years. When he first entered the hospital he was suffering from symptoms of obstruction; the growth filled the nasal fossa on the left side, but did not then extend through into the nasopharynx. It obstructed the posterior naris completely on the left side, and extended through to the lip anteriorly. It appeared to have broken through the sæptum as the result of pressure. I have made several attempts to get a wire around the growth, but have not been able to accomplish it. I removed a small portion for microscopic examination, and the manipulation was attended by free hæmorrhage. Dr. Walter Reed, United States Army, our pathologist, reported that it was a fibrosarcoma.

Dr. Rice: What is the attachment of the growth?

Dr. Bryan: I do not know. It seems to be confined to the nose, and does not extend into the antrum. It is evidently growing. There is some tumefaction externally on the side of the nose. There is no hæmorrhage now, but it bleeds readily upon any interference.

Dr. M. R. Ward: The case just presented by Dr. Bryan recalls to my mind a case of nasopharyngeal growth in which I operated four years ago, and illustrates the exceeding great difficulty of making a differential diagnosis between a simple fibroma undergoing inflammatory change and a fibrosarcoma. The specimen was submitted to four different pathologists, two of whom pronounced it a simple fibroma, and the other two called it a fibrosarcoma. The fact that the young man still lives, four years after the operation, with no evidence of recurrence, leads me to believe that the growth was most probably a simple fibroma undergoing inflammatory change. While sarcoma of the nose is not necessarily a fatal disease, yet I am inclined to the opinion that it is far more fatal than the literature on the subject would warrant us in believing. It is no easy matter for a microscopist to differentiate between an inflammatory exudate and a small round-celled sarcoma, and in all such cases an element of doubt exists in my mind when recovery follows an operation for sarcoma of the nose.

Dr. J. E. Boylan: I agree with the gentleman who has just spoken, that there might be a question as to the certainty of the diagnosis in some forms of sarcoma—as, for example, in the small round-celled variety—even when a most careful microscopic examination is made. In the frequently occurring spindle-celled growth, however, such as we would expect to find in fibrosarcoma, I believe the microscopic diagnosis can be accepted as conclusive, as there is no condition with which the characteristic spindle-celled formation can readily be confounded.

I am, further, not prepared to accept the fact of the patient's recovery as proof that the growth is not a true sarcoma; quite a number of cases of recovery—with immunity lasting for years at least—are on record, and I wish to take this opportunity of stating that in the case which I had the honor to report in our *Transactions* of last year, and in which the microscope demonstrated the nature of the growth in the opinion of several expert microscopists, the patient is still in good health, although nearly three years have now elapsed since the operation.

Dr. Casselberry: Regarding the distinction between fibroma and sarcoma, I am reminded of a case which I operated upon several years ago, and reported as a rare case of genuine fibroma of the nose proper. It was of firm consistence, vascular on section, of about four years' growth, distended the nostril, did not protrude into the nasopharynx, and was visible by casual anterior inspection. It was packed so firmly in the inequalities of the nostril that it could not be enveloped by a wire. I adopted the expedient of first slitting it into pieces by a galvano-cautery knife electrode, and then removing these by an incandescent snare. It was attached in the ethmoid region, and the sæpta between these cells, and also the turbinated bodies, had undergone absorption, producing a single large nasal cavern with moderately smooth walls, in which it was easy to see and operate. Microscopic examination by a competent expert showed it to be a pure fibroma. In the course of two or three weeks I removed an ounce bottleful of the fragments. The case made a good recovery and has had no recurrence. This case of Dr. Bryan's differs, however, from mine, and I find upon touching the anterior portion with the probe that it is soft. This is a point of distinction: the sarcomata are rather soft, while fibromata in the nose are harder. In this case the growth fills up the nose, extends into the pharynx, and causes the eye to bulge forward, which makes me think that it arises from the antrum of Highmore. I recall a similar case of sarcoma in which the primary origin was in the antrum. In that event only an external major operation is available. That it is a sarcoma is reasonably certain, both from the microscopic report and from its clinical aspects, and nasal sarcoma in this stage of development should be extirpated with thoroughness, in order that a hope of non-recurrence may be held. It is unfortunate that patients so commonly refuse external operations for nasal malignant growths until too late a period.

Dr. Wright: The fact that a growth exists in the nasopharynx raises in my mind considerable doubt as to its benign character, even at the age of this patient; but, when springing from the upper anterior part of the nose, as it appears to do in this case, I should, in the absence of a microscopical report, consider it a sarcoma. Pure fibroma of the nasal passages is very rare, while pure fibroma in the nasopharynx is of comparatively common occurrence in male adolescence. In the posterior portion of the nose the fibrous aponeurosis of the pharynx is continued for a short distance upon its upper wall and over the posterior extremities of the turbinate bodies, and the new growths of this region consequently resemble those occurring in the pharynx. A pure fibroma growing from the anterior portion of the nose is almost unknown—that is, a pure fibroma.

Dr. Casselberry: I have noticed in the foreign journals during the past year reports of several cases of success following Luc's new operation for empyema of the frontal sinuses, and we are indebted to Dr. Bryan for what is probably the first report on this particular operation made in this country. He confirms Luc's favorable advices. The success of this external operation and its freedom from objections is the more marked since intranasal operating, in my experience, is unsatisfactory, so far as concerns an absolute cure of the frontal-sinus empyema, and since by the old external operations there was left a scar and often a permanently discharging sinus. The chances of success, therefore, are much better by Luc's method, which offers in the first place a better chance of permanent cure, and, secondly, that without much scar. In cases in which I have operated by the intranasal method, removing the anterior end of the middle turbinated body and all obstructing granulations and polypi, in order to secure better drainage, benefit has accrued; the headaches stopped, the discharge lessened, and the patients are more comfortable, but generally dissatisfied that a perfect cure has not resulted, and yet wearied by treatment to the point of refusing, as a last resort, an external operation. Therefore, I should consider it expedient in future to carry out the plan of Dr. Bryan, and recommend Luc's external operation at once without losing time by intranasal procedures other than the removal of obstructing polyps, which should be done in any event.

Dr. J. Solis-Cohen: As regards the therapeutics of these cases, and the choice of operations, I think the best one in this case would be extirpation after access by Rouge's operation—lifting the nose up, and access by the capacious pharynx to the remainder.

Dr. Bryan: I would say in reply to the last speaker that the eye symptoms are of very recent date, and have appeared only since my last effort to pass the wire—about a month ago. At that time I spent two hours working over him, and he lost some blood and was very much exhausted, and since then he thinks that his symptoms have been worse than before. He has no headache at present, and his dizziness is less troublesome.

Dr. Simpson: Could this not be classed as an "inoperable" case? It has existed for several years, an operation would be very difficult to perform, it could not be wholly removed, and there would be absolute certainty of its return.

Dr. Solis-Cohen: I recall one of my patients, a woman, who got along very well, and who lived for several years after the operation of extirpation from nose, antrum, and pharynx, after exposure by Rouge's procedure. There was no return of the disease for several months and she did very well, but growths recurred and recurred, rendering several subsequent operations necessary through nose and pharynx, until she finally succumbed from exhaustion. This patient can be operated upon. The boy is only twenty years of age, and we should try to save him, or at least do something for his relief and to prolong his life. There is no difficulty in getting into the pharynx and in removing that portion of the growth. I examined it hastily and, of course, from only a momentary view of the case, could not say positively, but it would be my opinion that the growth should be removed by operation. The boy will die without the operation. Is it worth while to try to save him? That is the question for us to decide.

Dr. Rice: I have had several cases of growths arising in the nasal passages, not unlike the present case. The question is, as Dr. Cohen has said, whether we shall allow this patient to die without any assistance or attempt to afford him some relief. The growth develops rapidly, the eye symptoms and other effects of pressure will increase, until finally the patient meets a welcome death. This recalls a similar case under the care of Dr. McBurney, of New York, during the last winter. Dr. McBurney did a large operation, involving the removal of the upper jaw, the orbit, ethmoid, and antrum. The boy lived for several months—it may have been a year. In my opinion it was much better to operate than to allow the boy to die without operation. This case is undoubtedly malignant. As Dr. Wright says, pure fibroma is very rare in this portion of the nose. As regards the operation, it should be thorough and radical. Operations with the cold or hot snare are insufficient; we can not accomplish anything with simple intranasal work in the majority of these cases. These patients will go on from bad to worse if nothing is done for them. We can not see them die without making an attempt to assist them. Once having decided that the growth is malignant, the entire portion affected should be removed by radical operation.

Dr. Mackenzie: Long experience with this class of cases teaches me that, for complete extirpation, a radical operation is nearly always, if not always, necessary. In many instances, unfortunately, resort to capital measures is too long deferred. Time and, in the case of malignant neoplasm, life are thereby lost.

In Rouge's operation, referred to by Dr. Cohen, it is often impossible to get at the entire area occupied by the growth, and therefore some such procedure as that of Langenbeck, in which the upper jaw is rotated outward, must be undertaken. I think the present occasion a peculiarly appropriate one to insist upon the importance of early diagnosis and radical operative procedure in cases of actual or suspected malignant or semimalignant tumors of this region.

Individual growths occupying the extensive area covered by the present one should always be regarded with suspicion, as they are often malignant in nature. On the other hand, enormous simple fibrous tumors are occasionally seen in this situation, producing great deformity and occupying both nasal passages and nasal pharynx. Such a case has recently come under my notice. After ineffectual attempts at removal through the natural passages, a modified Langenbeck operation was resorted to and the entire growth, with its attachments, removed. The microscope showed it to be a simple fibroma.

(To be continued.)

Miscellany.

British Medicine in Greater Britain.—This was the title of Dr. William Osler's address in medicine delivered before the British Medical Association on September 1st. After speaking of the contention between the British and the French on the North American continent and of the American Revolution, he exclaimed: "Surely a unique spectacle that a century later descendants of the actors of these two great dramas should meet in an English city in New France!"

Likening the English race to the ancient Greeks, Dr. Osler proceeded as follows: "We English are the modern Greeks, and we alone have colonized as they did, as free peoples. There have been other great colonial empires, Phœnician, Roman, Spanish, Dutch, and French, but in civil liberty and intellectual freedom Magna Græcia and Greater Britain stand alone. The parallel so often drawn between them is of particular interest with reference to the similarity between the Greek settlements in Sicily and the English plantations on the Atlantic coast. Indeed, Freeman says: 'I can never think of America without something suggesting Sicily, or of Sicily without something suggesting America.' I wish to use the parallel only to emphasize two points, one of difference and one of resemblance. The Greek colonist took Greece with him. Hellas had no geographical bounds, 'Massilla and Olbia were cities of Hellas in as full sense as Athens or Sparta.' While the emigrant Britons changed their sky, not their character, in crossing the great sea; yet the home-stayers had never the same feeling toward the plantations as the Greeks had toward the colonial cities of Magna Græcia. If, as has been shrewdly surmised, Professor

Seely was Herodotus reincarnate, how grieved the spirit of the father of history must have been to say of Englishmen, 'nor have we even now ceased to think of ourselves as simply a race inhabiting an island off the northern coast of the Continent of Europe.' The assumption of gracious superiority which, unless carefully cloaked, smacks just a little of our national arrogance, is apt to jar on sensitive colonial nerves. With the expansion of the Empire, and the supplanting of a national by an imperial spirit, this will become impossible. That this sentiment never prevailed in Hellas, as it did later in the Roman Empire, was due largely to the fact that in literature, in science, and in art, the colonial cities of Greece early overshadowed the mother cities. It may be because the settlements of Greater Britain were things of slower growth that it took several generations and several bitter trials to teach a lesson the Greeks never had to learn."

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"It would carry me too far afield to discuss the differences between the native Briton and his children scattered so widely up and down the earth. In Canada, South Africa, Australia, and New Zealand types of the Anglo-Saxon race are developing which will differ as much from each other, and from the English, as the American does to-day from the original stock; but amid these differences can everywhere be seen those race qualities which have made us what we are—'courage, national integrity, steady good sense, and energy in work.' At a future meeting of the association, perhaps in Australia, a professional Sir Charles Dilke with a firm grasp of the subject may deal with the medical problems of Greater Britain in a manner worthy of the address in medicine. My task, as I mentioned at the outset, is much less ambitious.

"Could some one with full knowledge patiently analyze the characteristics of British medicine, he would find certain national traits sufficiently distinct for recognition. Three centuries can not accomplish very much (and that period has only just passed since the revival of medicine in England), but the local conditions of isolation, which have been singularly favorable to the development of special peculiarities in the national character, have not been without effect in the medical profession. I can not do more than touch upon a few features, which will be useful as indicating the sources of influence upon Great Britain in the past, and which may perhaps be suggestive as to lines of progress in the future."

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"While in critical scholarship and in accurate historical studies British medicine must take a second place, the influence of Linacre, exerted through the Royal College of Physicians and the old universities, has given to the humanities an important part in education, so that they have molded a larger section of the profession than in any other country. A physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him these finer qualities of heart and head which count for so much in life. Pasture is not everything, and that indefinable, though well understood, something which we know as breeding is not always an accompaniment of great professional skill. Medicine is seen at its best in men whose faculties have had the highest and most harmonious culture. The Lathams, the Watsons, the Pagets, the Jenners, and the Gairdners have influenced the profession less by their special work than by exemplifying those graces of life and refinements of heart which make up character. And the men of this stamp in Greater Britain have left the most enduring mark—Beaumont, Bovell, and Hodder in Toronto; Holmes, Campbell, and Howard in this city; the Warrens, the Jacksons, the Bigelows, the Bowditches, and the Shattucks in Boston; Bard, Hosack, Francis, Clark, and Flint, of New York; Morgan, Shippen, Redman, Rush, Coxe, the elder Wood, the elder Pepper, and the elder Mitchell, of Philadelphia—Brahmans all, in the language of the greatest Brahman among them, Oliver Wendell Holmes—these and men like unto them have been the leaven which has raised our profession above the dead level of a business."

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"Linacre has been well called, by Payne, Harvey's intellectual grandfather. 'The discovery of the circulation of the blood was the climax of that movement which began a century and a half before with the revival of Greek medical classics, and especially of Galen' (Payne). Harvey returned to Greek methods and became the founder of modern experimental physiology and the great glory of British scientific medicine. The demonstration of the circulation of the blood remains in every detail a model research. I shall not repeat the oft-told tale of Harvey's great and enduring influence, but I must refer to one feature which, until lately, has been also a special characteristic of his direct successors in Great Britain. Harvey was a practitioner and a hospital physician. There are gossiping statements by Aubrey to the effect that 'he fell mightily in his practice' after the publication of the *De motu cordis*, and that his 'therapeutic way' was not admired; but to these his practical success is the best answer. It is remarkable that a large proportion of all the physiological work of Great Britain has been done by men who have become successful hospital physicians or surgeons. I was much impressed by a conversation with Professor Ludwig in 1884. Speaking of the state of English physiology, he lamented the lapse of a favorite English pupil from science to practice; but, he added, 'while sorry for him, I am glad for the profession in England.' He held that the clinical physicians of that country had received a very positive impress from the work of their early years in physiology and the natural sciences. I was surprised at the list of names which he cited; among them I remember Bowman, Paget, Savory, and Lister. Ludwig attributed this feature in part to the independent character of the schools in England, to the absence of the university element so important in medical life in Germany, but, above all, to the practical character of the English mind, the better men preferring an active life in practice to a secluded laboratory career."

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"The Greek faculty which we possess of thinking and acting has enabled us, in spite of many disadvantages, to take the lion's share in the great practical advances in medicine. Three among the greatest scientific movements of the century have come from Germany and France. Bichât, Laennec, and Louis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology; while Pasteur and Koch have revolutionized the study of the causes of disease; and yet, the modern history of the art of medicine could almost be written in its fullness from the records of the Anglo-Saxon race. We can claim almost every practical advance of the very first rank—

vaccination, anæsthesia, preventive medicine, and antiseptic surgery, the 'captain jewels in the carcanet' of the profession, beside which can be placed no others of equal lustre."

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"Undue reverence for authority as such, a serene satisfaction with the *status quo*, and a fatuous objection to change have often retarded the progress of medicine. In every generation, in every country, there have been, and ever will be, *laudatores temporis acti*, in the bad sense of that phrase, not a few of them men in high places, who have lent the weight of a complacent conservatism to bolster up an ineffectual attempt to stay the progress of new ideas. Every innovator from Harvey to Lister has been made to feel its force. The recently issued life of Thomas Wakley is a running commentary on this spirit, against the pricks of which he kicked so hard and so effectually. But there are signs of a great change. The old universities and the colleges, once the chief offenders, have been emancipated, and remain no longer, as Gibbon found them, steeped in port and prejudice. The value of authority *per se* has lessened enormously, and we of Greater Britain have perhaps suffered as the pendulum has swung to the other extreme. Practice loves authority, as announced in 'the general and perpetual voice of men.' Science must ever hold with Epicharmus that a judicious distrust and wise skepticism are the sinews of the understanding. And yet the very foundations of belief in almost everything relative to our art rest upon authority. The practitioner can not always be the judge; the responsibility must often rest with the teachers and investigators, who can only learn in the lessons of history the terrible significance of the word. The fetters of a thousand years in the treatment of fever were shattered by Sydenham—shattered only to be riveted anew. How hard was the battle in this century against the intrenched and stubborn foe! Listen to the eloquent pleadings of Stokes, pleading as did Sydenham, against authority, and against the bleedings, the purgings, and sweatings of fifty years ago. 'Though his hair be gray and his authority high, he is but a child in knowledge and his reputation an error. On a level with a child, so far as correct appreciation of the great truths of medicine is concerned, he is very different in other respects, his powers of doing mischief are greater; he is far more dangerous. Oh, that men would stoop to learn, or at least cease to destroy!' The potency of human authority among the powers that be was never better drawn than by the judicious Hooker in his section on this subject. 'And this not only with "the simpler sort," but the learneder and wiser we are, the more such arguments in some cases prevail with us. The reason why the simpler sort are moved with authority is the conscience of their own ignorance; whereby it cometh to pass that having learned men in admiration, they rather feared to dislike them than know wherefore they should allow and follow their judgments. Contrariwise with them that are skillful authority is much more strong and forcible; because they only are able to discern how just cause there is why to some men's authority so much should be attributed. For which cause the name of Hippocrates (no doubt) were more effectual to persuade even such men as Galen himself than to move a silly empiric.'"

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"Turning now to the main question of the development of this British medicine in Greater Britain, I must at once acknowledge the impossibility of doing justice to it. I can only indicate a few points of importance, and I must confine my remarks chiefly to the American part of Greater Britain. We may recognize three distinct periods corresponding to three distinct waves of influence, the first from the early immigration to about 1820, the second from about 1820 to 1860, and the third from about 1860 to the present time.

"The colonial settlements were contemporaneous with the revival of medicine in England. Fellow-students of Harvey at Cambridge might have sailed in the Mayflower and the Arbella. The more carefully planned expeditions usually enlisted the services of a well-trained physician, and the early records, particularly of the New England colonies, contain many interesting references to these college-bred men. Giles Firman, who settled in Boston in 1632, a Cambridge man, seems to have been the first to give instruction in medicine in the new world. The parsons of that day had often a smattering of physic, and illustrated what Cotton Mather called an 'angelical conjunction.' He says, 'Ever since the days of Luke, the Evangelist, skill in *Physick* has been frequently professed and practised by Persons whose more declared Business was the study of Divinity.' Firman himself, finding physic 'but a meane helpe,' took orders. These English physicians in the New England colonies were scholarly, able men. Roger Chillingworth, in Hawthorne's *Scarlet Letter*, has depicted them in a sketch of his own life: 'Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully, too, for the advancement of human welfare—men, thoughtful for others, caring little for themselves, kind, just, true, and of constant if not warm affections'—a singularly truthful picture of the old colonial physician.

"Until the establishment of medical schools, University of Pennsylvania, 1763; King's College (afterward Columbia), 1767; Harvard, 1782, the supply of physicians for the colonies came from Great Britain, supplemented by men trained under the old apprentice system, and of colonists who went to Edinburgh, Leyden, and London for their medical education. This latter group had a most powerful effect in molding professional life in the pre-revolutionary period. They were men who had enjoyed not alone the instruction but often the intimate friendship of the great English and European physicians. Morgan, Rush, Shippen, Bard, Wistar, Hosack, and others had received an education comprising all that was best in the period, and had acquired the added culture which can only come from travel and wide acquaintance with the world. Morgan, the founder of the medical school of the University of Pennsylvania, was away seven years, and before returning had taken his seat as a corresponding member of the French Academy of Surgery, besides having been elected a Fellow of the Royal Society. The War of Independence interrupted temporarily the stream of students, but not the friendship which existed between Cullen and Fothergill and their old pupils in America. The correspondence of these two warm friends of the colonies testifies to the strong professional intimacy which existed at the time between the leaders of the profession in the old and new worlds.

"But neither Boerhaave, Cullen, nor Fothergill stamped colonial medicine as did the great Scotchman, John Hunter. Long, weary centuries separated Harvey from Galen; not a century elapsed from the death of the great physiologist to the advent of the man in whose phenomenal personality may be seen all the distinctive traits of modern medicine, and the range of whose mighty intellect has had few, if any, equals since Aristotle. Hunter's influence on the profession of this continent, so deep and enduring, was exerted in three ways. In the first place, his career as an army surgeon, and his writings on subjects of special interest to military men, carried his work and ways into innumerable campaigns in the long French wars and in the War of Independence. Hunter's works were reprinted in America as early as 1791 and 1793. In the second place, Hunter had a number of most distinguished students from the colonies, among whom were two who became teachers of wide reputation. William Shippen, the first professor of anatomy in the University of Pennsylvania, lived with Hunter on terms of the greatest intimacy. He brought back his methods of teaching and some measure of his spirit. With the exception of Hewson and Home, Hunter had no more distinguished pupil than Philip Syng Physick, who was his house surgeon at St. George's Hospital, and his devoted friend. For more than a generation Physick had no surgical compeer in America, and enjoyed a reputation equaled by no one save Rush. He taught Hunterian methods in the largest medical school in the country, and the work of his nephew (Dorsey) on surgery is very largely Hunter modified by Physick. But in a third and much more potent way the great master influenced the profession of this continent. Hunter was a naturalist to whom pathological processes were only a small part of a stupendous whole, governed by law, but which could never be understood until the facts had been accumulated, tabulated, and systematized. By his example, by his prodigious industry, and by his suggestive experiments he led men again into the old paths of Aristotle, Galen, and Harvey. He made all thinking physicians naturalists, and he lent a dignity to the study of organic life, and re-established a close union between medicine and the natural sciences. Both in Britain and Greater Britain he laid the foundation of the great collections and museums, particularly those connected with the medical schools. The Wistar-Horner and the Warren museums originated with men who had been greatly influenced by Hunter. He was, moreover, the intellectual father of that interesting group of men on this side of the Atlantic who, while practising as physicians, devoted much time and labor to the study of natural history. In the latter part of the last century and during the first thirty years of this, the successful practitioner was very often a naturalist. I wish that time permitted me to do justice to the long list of men who have been devoted naturalists and who have made contributions of great value. Benjamin Smith Barton, David Hosack, Jacob Bigelow, Richard Harlan, John D. Goodman, Samuel George Morton, John Collins Warren, Samuel L. Mitchell, J. Aiken Meigs, and many others have left the records of their industry in their valuable works and in the *Transactions* of the various societies and academies. In Canada, many of our best naturalists have been physicians, and collections in this city testify to the industry of Holmes and McCullough.

"I was regretting the *humanities* a few minutes ago, and now I have to mourn the almost complete severance of medicine from the old natural history. To a man the most delightful recollections of whose student life are the Saturdays spent with a preceptor who had a Hunterian appetite for specimens—anything from a trilobite to an acarus—to such a one across the present brilliant outlook comes the shadow of the thought that the conditions of progress will make impossible again such careers as those of William Kitchen Parker and William Carmichael McIntosh.

"Until about 1820 the English profession of this continent knew little else than British medicine. After this date in the United States the ties of professional union with the old country became relaxed, owing in great part to the increase in the number of home schools, and in part to the development of American literature. To 1820 one hundred and fourteen native medical books of all kinds had been issued from the press, and one hundred and thirty-one reprints and translations, the former English, the latter, few in number, and almost exclusively French (Billings).

"Turning for a few minutes to the condition of the profession in Canada during this period, I regret that I can not speak of the many interesting questions relating to the French colonies. With the earliest settlers physicians had come, and among the Jesuits, in their devoted missions, there are records of *donnés* (laymen attached to the service) who were members of the profession. One of these, René Goupil, suffered martyrdom at the hands of the Iroquois.

"Between the fall of Quebec in 1759 and 1820, the English population had increased by the settlement of Upper Canada, chiefly by United Empire loyalists from the United States, and after the war of 1812 by settlers from the old country. The physicians in the sparsely settled districts were either young men who sought their fortunes in the new colony or were army surgeons who had remained after the revolutionary war or the war of 1812. The military element gave for some years a very distinctive stamp to the profession. These surgeons were men of energy and ability, who had seen much service, and were accustomed to order, discipline, and regulations. Sabine, in his *History of the Loyalists*, refers to the Tory proclivities of the doctors, but says that they were not so much disturbed as the lawyers and clergymen. Still a good many of them left their homes for conscience sake, and Canniff, in his *History of the Profession in Upper Canada*, gives a list of those known to have been among the United Empire Loyalists.

"The character of the men who controlled the profession of the new colony is well shown by the proceedings of the medical board which was organized in 1819. Drs. Macaulay and Widmer, both army surgeons, were the chief members. The latter, who has well been termed the father of the profession in Upper Canada, a man of the very highest character, did more than any one else to promote the progress of the profession; and throughout his long career his efforts were always directed to the proper channels. In looking through Canniff's most valuable work, one is much impressed by the stirling worth and mettle of the old army surgeons who in the early days formed the larger part of the profession. The minutes of the medical board indicate with what military discipline the candidates were examined, and the percentage of rejections has probably never been higher in the history of the province than it was in the first twenty years of the existence of the board."

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"Turning now to the second period, we may remark in passing that the nineteenth century did not open very auspiciously for British medicine. Hunter had left no successor, and powerful as had been his influence it was too weak to stem the tide of abstract speculation, with which Cullen, Brown, and others flooded the profession. No more sterile period exists than the early decades of this century. Willan (a great naturalist in skin diseases) with a few others saved it from utter oblivion. The methods of Hippocrates, of Sydenham, and of Hunter had not yet been made available in everyday work.

"The awakening came in France, and such an awakening! It can be compared with nothing but the renaissance in the sixteenth and seventeenth centuries, which gave us Vesalius and Harvey. 'Citizen' Bichât and Broussais led the way, but Laennec really created clinical medicine as we know it to-day. The discovery of auscultation was only an incident, of vast moment it is true, in a systematic study of the correlation of symptoms with anatomical changes. Louis, Andral, and Chomel, extended the reputation of the French school, which was maintained to the full until the sixth decade, when the brilliant Trousseau ended for a time a long line of Paris teachers whose audience had been world wide. The revival of medicine in Great Britain was directly due to the French. Bright and Addison, Graves and Stokes, Forbes and Marshall Hall, Latham and Bennett were profoundly affected by the new movement. In the United States Anglican influence did not wane until after 1820. Translations of the works of Bichât appeared as early as 1802, and there were reprints in subsequent years, but it was not until 1823 that the first translation (a reprint of Forbes's edition) of Laennec was issued. Broussais's works became very popular in translations after 1830, and in the journals from this time on the change of allegiance became very evident. But men rather than books diverted the trend of professional thought. After 1825, American students no longer went to Edinburgh and London, but to Paris, and we can say that between 1830 and 1860 every teacher and writer of note passed under the Gallic yoke. The translations of Louis's works and the extraordinary success of his American pupils, a band of the ablest young men the country had ever seen, added force to the movement. And yet this was a period in which American medical literature was made up largely of pirated English books, and the systems, encyclopædias, and libraries, chiefly reprints, testify to the zeal of the publishers. Stokes, Graves, Watson, Todd, Bennett, and Williams, furnished Anglican pap to the sucklings, as well as strong meat to the full grown. In spite of the powerful French influence the text-books of the schools were almost exclusively English.

"In Canada the period from 1820 to 1860 saw the establishment of the English universities and medical schools. In Montreal the agencies at work were wholly Scotch. The McGill Medical School was organized by Scotchmen, and from its inception has followed closely Edinburgh methods. The Paris influence, less personal, was exerted chiefly through English and Scotch channels. The Upper Canada schools were organized by men with English affiliations, and the traditions of Guy's, St. Bartholomew's, St. Thomas's, St. George's, and the London Hospital, rather than those of Edinburgh, have prevailed in Toronto and Kingston.

"The local French influence on British medicine in Canada has been very slight. In the early decades of the century, when the cities were smaller, and the intercourse between the French and English somewhat closer, the reciprocal action was more marked. At that period English methods became somewhat the vogue among the French; several very prominent French Canadians were Edinburgh graduates. Attempts were made in the medical journals to have communications in both languages, but the fusion of the two sections of the profession was no more feasible than the fusion of the two nationalities, and the development has progressed along separate lines.

"The third period dates from about 1860, when the influence of German medicine began to be felt. The rise of the Vienna school was for a long time the only visible result in Germany of the French renaissance. Skoda, the German Laennec, and Rokitansky, the German Morgagni, influenced English and American thought between 1840 and 1860, but it was not until after the last date that Teutonic medicine began to be felt as a vitalizing power, chiefly through the energy of Virchow. After the translation of the *Cellular Pathology* by Chance (1860) the way lay clear and open to every young student who desired inspiration. There had been great men in Berlin before Virchow, but he made the town on the Spree a Mecca for the faithful of all lands. From this period we can date the rise of German influence on the profession of this continent. It came partly through the study of pathological histology, under the stimulus given by Virchow, and partly through the development of the specialties, particularly diseases of the eye, of the skin, and of the larynx. The singularly attractive courses of Hebra, the organization on a large scale in Vienna of a system of graduate teaching designed especially for foreigners, and the remarkable expansion of the German laboratories combined to divert the stream of students from France. The change of allegiance was a deserved tribute to the splendid organization of the German universities, to the untiring zeal and energy of their professors, and to their single-minded devotion to science for its own sake.

"In certain aspects the Australasian Settlements present the most interesting problems of Greater Britain. More homogeneous, thoroughly British, isolated, distant, they must work out their destiny with a less stringent environment than, for example, surrounds the English in Canada. The traditions are more uniform and of whatever character have filtered through British channels. The professional population of native-trained men is as yet small, and the proportion of graduates and licentiates from the English, Scotch, and Irish colleges and boards guarantees a dominance of Old Country ideas. What the maturity will show can not be predicted, but the vigorous infancy is full of crescent promise. On looking over the files of Australian and New Zealand journals, one is impressed with the monotonous similarity of the diseases in the antipodes to those of Great Britain and of this continent. Except in the matter of parasitic affections and snake-bites, the nosology presents few distinctive qualities. The proceedings of the four Intercolonial Congresses indicate a high level of professional thought. In two points Australia has not progressed as other parts of Greater Britain. The satisfactory regulation of practice, so early settled in Canada, has been beset with many difficulties. Both in the United States and in Australia the absence of the military element, which was so strong in Canada, may in part at least account for the great difference which has prevailed in this matter of the state license. The other relates to the question of ethics, to which one really does not care to refer, were it not absolutely forced upon the attention in reading the journals. Elsewhere professional squabbles, always so unseemly and distressing, are happily becoming very rare, and in Great Britain, and on this side of the water, we try at any rate 'to wash our dirty linen at home.' In the large Australian cities differences and dissensions seem lamentably common. Surely they must be fomented by the atrocious system of elections to the hospitals, which plunges the entire profession every third or fourth year into the throes of a contest, in which the candidates have to solicit the suffrages of from two to four thousand voters! Well, indeed, might Dr. Batchelor, in his address at the fourth Intercolonial Congress, say: 'It is a scandal that in any British community, much less in a community which takes pride in a progressive spirit, such a pernicious system should survive for an hour.'

"Of India, of 'Vishnu-land,' what can one say in a few minutes? Three thoughts at once claim recognition. Here in the dim dawn of history, with the great Aryan people, was the intellectual cradle of the world. To the Hindus we owe a debt which we can at any rate acknowledge; and even in medicine, many of our traditions and practices may be traced to them, as may be gathered from that most interesting *History of Aryan Medical Science*, by the Thakore Saheb of Gondal.

"Then there arises the memory of the men who have done so much for British medicine in that great empire. Far from their homes, far from congenial surroundings, and far from the stimulus of scientific influences, Annesley, Ballingall, Twining, Morehead, Waring, Parkes, Cunningham, Lewis, Vandyke, Carter, and many others have upheld the traditions of Harvey and of Sydenham. On the great epidemic diseases how impoverished would our literature be in the absence of their contributions! But then there comes the thought of 'the little done, the undone vast,' when one considers the remarkable opportunities for study which India has presented. Where else in the world is there such a field for observation in cholera, leprosy, dysentery, the plague, typhoid fever, malaria, and a host of other less important maladies? And what has the British Government done toward the scientific investigation of the diseases of India? Until recently little or nothing, and the proposal to found an institute for the scientific study of disease has actually come from the native chiefs! The work of Dr. Hankin and of Professor Haffkine, and the not unmixed evil of the brisk epidemic of plague in Bombay, may arouse the officials to a consciousness of their shortcomings. While sanitary progress has been great, as shown in a reduction of the mortality from sixty-nine per mille before 1857 to fifteen per mille at present, many problems are still urgent, as may be gathered from reading Dr. Harvey's presidential address and the *Proceedings of the Indian Medical Congress*. That typhoid fever can be called the 'scourge of India' and that the incidence of the disease should remain so high among the troops point to serious sanitary defects as yet unremedied. As to the prevalence of venereal disease among the soldiers—an admission of nearly five hundred per mille tells its own tale. On reading the journals and discussions one gets the impression that matters are not as they should be in India. There seems to be an absence of proper standards of authority. Had there been in each presidency during the past twenty years well-equipped government laboratories in charge of able men, well trained in modern methods, the contributions to our knowledge of epidemic diseases might have been epoch-making, and at any rate we should have been spared the crudeness which is evident in the work (particularly in that upon malaria) of some zealous but badly trained men.

"In estimating the progress of medicine in the countries comprising Greater Britain, the future rather than the present should be in our minds. The strides which have been taken during the past twenty years are a strong warrant that we have entered upon a period of exceptional development. When I see what has been accomplished in this city in the short space of time since I left, I can scarcely credit my eyes: the reality exceeds the utmost desire of my dreams. The awakening of the profession in the United States to a consciousness of its responsibilities and opportunities has caused unparalleled changes, which have given an impetus to medical education and to higher lines of medical work which has already borne a rich harvest. Within two hundred years who can say where the intellectual centre of the Anglo-Saxon race will be? The Mother Country herself has only become an intellectual nation of the first rank within a period altogether too short to justify a prediction that she has reached the zenith. She will probably reverse the history of Hellas, in which the mental superiority was at first with the colonies. At the end of the next century, ardent old-world students may come to this side 'as o'er a brook,' seeking inspiration from great masters, perhaps in this very city; or the current may turn toward the schools of the great nations of the south. Under new and previously unknown conditions, the Africander, the Australian, or the New Zealander may reach a development before which even 'the glory that was Greece' may pale. Visionary as this may appear, it is not one whit more improbable to-day than would have been a prophecy made in 1797 that such a gathering as the present would be possible within a century on the banks of the St. Lawrence.

"Meanwhile, to the throbbing vitality of modern medicine the two great meetings held this month, in lands so widely distant, bear eloquent testimony. Free, cosmopolitan, no longer hampered by the dogmas of schools, we may feel a just pride in a profession almost totally emancipated from the bondage of error and prejudice. Distinctions of race, nationality, color, and creed are unknown within the portals of the temple of Æsculapius. Dare we dream that this harmony and cohesion so rapidly developing in medicine, obliterating the strongest lines of division, knowing no tie of loyalty but loyalty to truth—dare we hope, I say, that in the wider range of human affairs a similar solidarity might ultimately be reached? Who can say that the forges of Time will weld no links between man and man stronger than those of religion or of country? Some Son of Beor, touched with prophetic vision, piercing the clouds which now veil the eternal sunshine of the mountain top—some spectator of all time and all existence (to use Plato's expression)—might see in this gathering of men of one blood and one tongue a gleam of hope for the future, of hope at least that the great race so dominant on the earth to-day may progress in the bonds of peace—a faint glimmer perhaps of the larger hope of humanity, of the day when 'the common sense of most shall hold a fretful world in awe.' There remains for us, Greater Britons of whatsoever land, the bounden duty to cherish the best traditions of our fathers, and particularly of the men who gave to British medicine its most distinctive features, of the men, too, who found for us the light and liberty of Greek thought—Linacre, Harvey, and Sydenham, those ancient founts of inspiration and models for all time in literature, science, and practice."

Vesical Calculus after the Cæsarean Section.—At a recent meeting of the Obstetrical and Gynæcological Society, a report of which is published in the August number of the *Glasgow Medical Journal*, Dr. A. W. Russell related the following case: The patient, twenty-seven years old, came to the Dispensary of the Samaritan Hospital on April 30, 1896, complaining of excessive, frequent, and irregular menstruation. Admission into the hospital was proposed, and in the mean time ergot was ordered. She did not continue the treatment, and only returned to the dispensary on August 6th, when it was found she had not improved. Her menstrual history showed that menstruation began at twelve years and a half of age, and was regular in every way up to the time of marriage five years and a half ago. Her first pregnancy was terminated at full time by Cæsarean section in the Maternity Hospital on March 15, 1892, Professor Cameron being the operator. In passing, menstruation was never regular after this operation. While her child was at the breast she had a hæmorrhage at six months. This recurred three weeks later and lasted for a fortnight. She became subject to these hæmorrhages, and on this account saw Professor Cameron eighteen months after her operation. He prescribed, but she did not improve, nor was she relieved by any other treatment tried during the following two years or more. A year ago she was under treatment for a severe "sickening" pain in the left side. She always had a similar but less severe pain with the hæmorrhage. Micturition after the operation was usually more frequent than formerly, sometimes as often as three times during the night, and there was a little pain before the act, but she had not complained specially of any urinary symptoms until the end of December, 1896, when micturition became still more frequent, blood was seen in the urine, and there was a thick sediment. By this time she had applied for admission into the hospital, but in the mean time Dr. Bell Todd was called, and prescribed for relief of the urinary symptoms. A week later, during micturition, a hard-pointed substance, which she thought she had felt for several days, presented at the urethral meatus. She consulted Dr. Illingworth in this emergency, and he, finding this body was the tip of a calculus, endeavored to remove it, but it broke across about three quarters of an inch up the canal. The patient was afterward admitted into the Samaritan Hospital under Dr. Edgar's care, and, under chloroform anæsthesia, the urethra was dilated, and the rest of the calculous formation, the greater part of which was adherent to the posterior wall of the bladder, was removed. The uterus was at the same time curetted. The calculus consisted mostly of soft phosphatic concretion, which crumbled away very readily during removal, but several harder fragments were obtained that had as their nucleus a piece of twisted silk suture, and two of them had formed round a knot. The treatment was continued by antiseptic douching of the bladder, and before the patient left the hospital a cystoscopic examination by Dr. J. H. Nicoll proved that, though the posterior wall had not completely healed, there was no more calculus.

On the Part Played by Insects in the Spread of Plague, and on the Receptivity of Different Animals to the Plague Infection; An Experimental Study.—In a recent number of the *Centralblatt für Bakteriologie und Parasitenkunde* there appears an article by Dr. George H. F. Nuttall under this title. The author became impressed with the fact that insects might, during the prevalence of the plague, be the means of disseminating the disease in the same manner as in cholera. Accordingly, a large number of experiments were undertaken to ascertain this fact. These experiments show that without a doubt the fly (*Musca domestica*) can disseminate the germ. When flies were fed on cultures of the plague bacillus, the organism was recovered from the dejecta and from the alimentary canal even as long as three days thereafter. His conclusions are that from a practical standpoint the utmost precautions should be taken to guard against flies when plague is prevalent. Dr. Nuttall also gives the results of his researches on the receptivity of different animals to the plague infection, which are of great interest.

"Carding" the Sciatic Nerve.—The operation of "carding," or "harrowing," the sciatic nerve for very obstinate sciatica, says a writer in the *Lancet* for August 14th, was first performed by Dr. Delagénière, of Mans, about a year ago. It was supposed that the cause of the pain in this case was a varicose condition of the veins surrounding the nerve. The intention was to excise these veins after the method recommended by Quénu, but when the nerve was exposed instead of the varix he expected he found only a number of small serpiginous vessels running along it, causing the surface to present a furrowed appearance. It was obviously impossible to ligature and resect these, so he contented himself with teasing, or carding, the fibres with a blunt forceps throughout the whole exposed portion of the nerve, in the hope of destroying the vessels existing in its deeper parts and of thus being able to put an end to the stasis in the venous twigs. The result was that the patient was cured. This, says the writer, encouraged another French surgeon, Dr. Gérard-Marchand, to attempt a similar process which he denominates *hersage*, or "harrowing," in sciatica where there was no reason to suppose that a varicose condition existed. The first case was that of a woman, aged thirty-seven years, who was unable to sleep or to stand upright, characteristic scoliosis being present. There were no signs of varicose veins or of hysteria. The second was that of a man, aged forty-five years, with a very old-standing sciatica, no treatment having been of any avail. Here also there were no varicose veins. The operation, which was similar in the two cases, was performed under chloroform anæsthesia, and consisted in exposing the nerve and teasing apart its fibres for a distance of two centimetres by means of a grooved director. The appearances were normal, there being no discoloration and no dilatation of the vessels. After the *hersage* the nerve was flattened out to twice its ordinary breadth. A drainage-tube was inserted and the wound sutured and dressed with iodoform and absorbent cotton. For several days the patients complained of pain in the nerve and of numbness in the limb. The pain, however, gradually passed off and sensation returned, complete recovery resulting in both cases. From experiments on animals, continues the writer, Dr. Gérard-Marchand has been led to conclude that *hersage* of the sciatic nerve produces temporary loss of sensation in the nerve, while the motor power is not interfered with. He suggests that probably this operation may be found of value in the case of other neuralgias which have resisted all ordinary treatment.

The Ætiology and Pathogeny of Simple Chorea; its Relation to Diseases of the Heart; its Treatment.—According to M. Marfan, in the *Semaine médicale*, 1897, page 153 (*Revue mensuelle des maladies de l'enfance*, August), the predisposing causes are the age of the patient (from six to fifteen years) and alcoholic or arthritic nervous heredity. The exciting causes are infectious diseases. Chorea is also nearly always secondary to acute articular rheumatism or to some infectious disease, such as influenza, measles, typhoid fever, scarlatina, and chicken-pox, or to chronic bronchitis with, probably, tuberculosis, boils on the nape of the neck, cervical adenitis, febrile dental periostitis, impetigo, suppurating otitis media, and endopericarditis. In nineteen cases out of seventy-six the author found no family history of disease, but he suspected an unobserved previous infection. He also considers the efficient part played by the mental emotions, and concludes that chorea is usually preceded either by acute rheumatism or by an infectious disease, and among these diseases acute articular rheumatism was the most closely allied to chorea.

Concerning the pathogeny, M. Marfan is distinctly in favor of the infection theory. Chorea, he says, is a neurosis provoked by a non-specific infection which is developed in predisposed soil. He rejects, consequently, the theories which make of chorea either a specific infectious disease or a neurosis of cerebro-spinal evolution.

M. Marfan also considers the relation of chorea to diseases of the heart, endocarditis or pericarditis. In fourteen cases out of seventy-six he found cardiac lesions, and in six of these fourteen cases the chorea was of rheumatic origin; the others arose from various infections. He concludes from this fact that there is an ætiological identity between chorea and endocarditis; the two arise from the same causes, and that is the reason of their coexistence.

M. Marfan recommends mental and physical rest, maximum doses of forty-five grains of antipyrine, and especially arsenic. He prefers Boudin's solution, of which he gives, in the beginning, sixty grains; this is increased to four hundred and fifty grains, and given until intolerance is shown; then this amount, which is never exceeded, is diminished and again increased, until finally progressive suppression is reached. M. Marfan completes this treatment by the use of some hypnotic (from fifteen to thirty grains of chloral), and during convalescence he advises gymnastics and sulphur baths.

The Treatment of Recurrent Typhus Fever with Methylene Blue.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 6th publishes a report of a recent meeting of the Medical Society of St. Petersburg at which M. Nefedieff stated that he had experimented with methylene blue in four cases of recurrent typhus fever with unfavorable results. It had been administered from the beginning of the second attack in doses of from 1.6 grain to 2.4 grains; it had seemed to increase the duration of the attack; at all events, in no case had it cut it short. Besides, it had always given rise to secondary symptoms, such as cardiac weakness, vomiting, and albuminuria, symptoms that could not possibly be attributed to the character of the epidemic, for the epidemic was benign, and all the symptoms disappeared from the time the employment of the methylene blue was suspended.

M. Mikhailoff, who had experimented on frogs and rabbits, had ascertained that the leucocytes did not fix the methylene blue until within a short time before death, and then very rarely. It might be said, then, that healthy protoplasm was not colored by methylene blue. At the autopsy of the animals experimented upon for a period of three weeks there had been found in all the visceral cavities a liquid colored blue; all the organs were also colored; the blood was methæmoglobinized, and the result had been a loss of oxygen which had caused degeneration of the parenchyma and had favored thrombosis. M. Mikhailoff had also found that methylene blue was absolutely contraindicated in man.

Infant Mortality in the Families of Tobacco Workers in Nancy.—The *Presse médicale* publishes a report of a recent meeting of the Société de médecine de Nancy, at which M. G. Étienne stated this occupation did not seem, on the whole, to have any very considerable influence even on the evolution of pregnancy. The mortality among the children of the workingwomen was more than double the infant mortality in the whole working population—thirty-seven per mille instead of seventeen per cent. of the total mortality. The prognosis was alarming in infants who continued to be nursed at the breast after their mothers had returned to their occupation. On the contrary, it was favorable in those whose mothers did not resume their work. The mortality was notably less in children who were nursed at the breast until their mothers resumed work, and then alternately given the breast milk and the bottle, or the bottle alone. M. Étienne thought that these conclusions led to the following practical conclusions: 1. The physician should not endeavor to facilitate nursing in women who have to resume work in a tobacco factory. 2. The general employment of sterilized milk should be furthered by its distribution at the lowest possible price, or even gratuitously, by relief associations and by the charitable institutions. 3. The mothers should not be allowed to resume work until a month or six weeks after confinement if the child lived. It was known, said M. Étienne, that after this lapse of time the child was much more apt to tolerate artificial feeding.

The Elimination of Methylene Blue.—At a recent meeting of the Paris Société médicale des hôpitaux, a report of which appears in the *Indépendance médicale* for August 4th, M. Achard and M. Castaigne stated that methylene blue was eliminated by the urine, not only in its natural color, but in a condition of colorlessness which was easily recognized owing to the green color which it produced when the urine was heated with acetic acid. In certain pathological cases, this colorless chromogen might exist in the urine in an isolated condition. This condition, said the authors, seemed to correspond to a renal trouble. From these new facts they concluded that, in a normal condition, the kidneys allowed the blue to pass without difficulty in a natural condition, and then there was formed only a small quantity of chromogen. When, on the contrary, renal permeability was altered, the elimination changed; the chromogen, the diffusibility of which was increased, might pass alone and more or less rapidly, according to the degree of alteration.

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HEREDITY WITH VARIATION.*

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Questions of heredity and variation are cytological ones—that is, questions of the anatomy, physiology, physiological chemistry, and pathology of cells.

Every human body may be looked upon as a vastly complex pattern of living mosaics or cells. A cell may be defined as a nucleated piece of protoplasm of microscopic size. The nucleus is a thread forming a network with fluid in its meshes, and the protoplasm is a jelly-like substance of a reticulated character. Each thread of the nucleus consists of thousands of vital units.

Just as the human body may be looked upon as an infinitely complex pattern of living mosaics, called cells, so the nuclear thread may also be compared to an infinitely complex pattern of still smaller living mosaics called vital units or hereditary units. These vital units have been given different names by various writers. Spencer calls them physiological units; Hertwig, idioblasts; Darwin, gemmules; Weismann, biophors. We will call them hereditary units, and the thread formed by them hereditary mass.

As the chemist has his atom, and the physicist his molecule, so the biologist must have his vital unit. These units are alike merely intellectual conceptions, yet they are at the same time intellectual necessities. It is very important to understand somewhat of the physiology of the cell. A cell may be described, after a popular fashion, as an expert chemist, artist, sculptor, painter, mathematician, and such like, in that it can draw lines as straight and curves as graceful as the most expert mathematician. It can paint in colors that rival the hues of the rainbow; it makes all of the beautiful forms of organic nature, and as a chemist it gives us all of the multitudinous products of organic chemistry, such as starches, sugar, pigments, spices, etc. A most important physiological property of the cell is that of mitosis, or cell division. Mitosis essentially consists of a series of processes by which the nucleus splits into two threads, and each of these attracts half of the protoplasm around it, so that from the one nucleus we get two nuclei, and from the one cell two cells. This process may be repeated a great number of times, so that from one cell multitudinous cells may be derived.

In unicellular creatures multiplication may take place by fission and by conjugation. Both of these processes can be studied by observation of the infusorians. Maupas's beautiful investigations on these unicellular animals have demonstrated that multiplication by fission may proceed to a prodigious extent for many generations, but that a time comes when the process fails, and the species will become exhausted and die out unless there is a rejuvenation of it by conjugation of individuals. In conjugation two individual infusoria come in apposition with each other. The nucleus in each undergoes subdivision. They reciprocally exchange part of their nuclear contents so that each infusorium comes to contain hereditary masses of two distinct individuals. From these rejuvenated (or fertilized) individuals multitudinous others may be derived until exhaustion again takes place.

Multiplication in multicellular creatures may be accomplished by budding (which is allied to fission), and is exemplified in the plant, hydra, the queen bee (parthenogenesis), etc., an dby fertilization (whic his allied to conjugation). A knowledge of the phenomena of fertilization of the ovum by the spermatozooid is essential to any understanding of the problems of heredity and variation in mankind. The nuclear thread of the ovum is its hereditary mass—the group of maternal hereditary units; likewise the nucleus of the spermatozooid contains the paternal group of hereditary units.

In fertilization, the spermatozooid (a nucleated ciliated cell) penetrates the ovum (a nucleated, encysted cell), its protoplasm disappears, and its nuclear thread comes into relation with the nuclear thread of the ovum; so that the fertilized ovum (a new creature, a veritable microcosm) is still a nucleated cell, but one in which the nucleus is compound, is hermaphroditic, in that it contains maternal and paternal threads—that is, maternal and paternal hereditary masses.

It will be convenient to speak of the maternal and paternal nuclear threads in the fertilized ovum as ancestral hereditary masses.

This hermaphroditic cell passes through the complex phases, illustrated by embryology, to the adult.

For our purposes it is sufficiently accurate to say that it divides into two cells, one of which we may call a germ cell, in that it will ultimately give origin to all the ova in the ovary, and a body cell, which ultimately forms all the cells that make up the body, such as bone cells, cartilage cells, muscle cells, nerve cells, etc.; so that now we may say that the human body consists of two great kinds of cells—germ cells and body cells.

When the fertilized ovum, by mitosis, divides into the two cells spoken of, the hermaphroditic nucleus in it splits in such a way (longitudinally) as to give exactly equal quantities of both the maternal and paternal hereditary masses in it to each cell, and so on through all the cell divisions throughout development; so that each cell in the adult is truly hermaphroditic. A very important fact to notice in the first division of the fertilized ovum is that the nucleus of one of the cells (the germ cell) does not undergo any differentiation; it remains like the nucleus of the fertilized ovum—is, in fact, one half of its nucleus, and therefore like it in all respects except size.

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* Read before the Medical Society of the District of Columbia, April 21, 1897.

This small nucleus, containing the undifferentiated ancestral hereditary masses and enveloped with its share of protoplasm, has the power of absorbing food, assimilating it, and growing to the size of the cell from which it was formed. By repeated divisions without differentiation it gives rise to all the adult ova in the adult ovary, all of which remain essentially like the originally fertilized ovum from which they are all derived and which, when fertilized by other spermatozooids, can go through the series of embryological changes.

The nucleus of the other cell, the body cell, does differentiate, does undergo chemical and structural changes; this differentiation being repeated at each division and subdivision of the body cell, so that ultimately all the diverse cells of the body are formed, which envelop and protect the germ cells (ova in the female, and spermatzooids in the male).

Suppose these ova, containing maternal and paternal hereditary masses, are fertilized by similarly complex spermatozooids, and the process is repeated generation after generation, there will come a time when the fertilized ovum will have a highly complex nucleus composed of many different ancestral hereditary masses.

One often hears the expression that a child is a chip off the old block; but this is only a very partial truth, for a child is pre-eminently a composite chip off of many old blocks.

Galton has compared the complex nucleus of the fertilized ovum to a modern Italian building which has been constructed of material—a column here, a cornice there, a lintel yonder—gathered from different classic buildings of varying antiquity.

In view of the increasing number of ancestral hereditary masses that must have accumulated in the nuclei of ova in the course of time, there must necessarily, for mechanical reasons, have arrived a period when these nuclei could receive no more of them by fertilization, unless natural selection should develop some saving device; hence we have, probably, an explanation of the phenomena of maturation in ova (the reducing process of Weismann.

Here the ovum, prior to fertilization, undergoes mitosis twice in succession, by which the polar bodies are formed, and in which the ancestral hereditary masses (by transverse instead of longitudinal cleavage) are diminished in number. A homologous process takes place in the maturation of spermatozooids. Fertilization increases the number, again, of the ancestral hereditary masses in the ovum to the specific number.

This union of two distinct hereditary masses is called amphimixis as well as fertilization.

Maturation and amphimixis or fertilization are the source of many variations in the body, good and bad, beautiful and ugly, geniuses and monstrosities; because, in the commingling of distinct hereditary masses, there is a struggle for existence between the hereditary units and a survival of the fittest. In this struggle some of the hereditary units mix, some intimately combine to produce a much modified form, some are destroyed, some lie dormant for varying lengths of time, and thus the possibilities of combination and permutations are almost endless.

So far as the problems of heredity and variation are concerned, we may say that the life cycle begins and ends with the germ cell. Insects lay their eggs in old age; among plants the annuals flower but to die; in higher creatures the cessation of the procreative power marks the beginning of bodily decline.

Bearing in mind that the human body consists of two great classes of cells, germ cells and somatic cells, the following scheme will be found useful in discussing heredity with variation—viz.:

- Germ cell (portion of antecedent germ cell).
  - Stable (heredity).
  - Unstable (variation).
    - 1. Fortuitous causes.
    - 2. Toxic blood as a cause.
    - 3. Somatic causes.

Just in proportion as fertilized germ cells during the mitoses of ontogeny give origin, among the somatic cells, to other germ cells that are structurally, and therefore physiologically, like themselves, just to that extent do we have heredity; on the other hand, just to the degree that the new germ cells which are produced are unstable, to that degree also do we meet with variations.

Many of the causes bringing about structural changes in the delicate mechanism of germ cells are entirely unknown, and are therefore designated as fortuitous. Many other causes, such as poison circulating in the blood, can readily enough be appreciated.

The man or woman who makes use of such drugs as alcohol, opium, chloral, and such like, in an intemperate manner, contains these poisons in solution in the blood, circulating to every part of the body, and thus bathing and profoundly influencing the germ cells. In consequence of this fact an acquired and habitual intemperance will seldom fail to leave its impress upon one or more of the offspring, either like the original vice or one very closely allied to it.

Thus intemperate people not only profoundly impair the health, the intelligence, and the morals of their offspring, by poisoning these delicate germ cells, but they also transmit the fatal tendency to crave for the very substances that have acted as poisons on these germ cells before and after fertilization. And one of the saddest features of this great medical truth is that the hereditary units which are concerned in transmitting these grave abnormal tendencies may lie dormant in the germs of one generation, to become active in those of the next; so that children of intemperate parents may lead honorable and temperate lives, and take every pains to rear, in turn, their own children in a wholesome and refining atmosphere, and yet these children of good environment may become intemperate through heredity, so that the sins of the grandparents may be visited, not on the children, but on the grandchildren.

These profound truths should lead all, and especially law-makers, to remember that "the man who inherits from his parents an impulsive or easily tempted nature and an inert will and judgment, and commits a crime under the influence of strong emotion, can no more be placed in the same category of responsibility with a man of more favorable constitution and temperament than can a man who steals a loaf under the pangs of starvation with a merchant who commits a forgery to afford him the means of prolonging a guilty career."

As to somatic causes—granting that structural changes in body cells can profoundly influence in some way the germ cells, and that therefore acquired characters can be transmitted—they are many and well defined. I will refer only this evening to food, and to use and disuse.

If the bullfinch is fed on hemp seed, its color is changed to black; if the canary is fed on cayenne, its plumage becomes darker; if the common green Amazonian parrot is fed on the fat of siluroid fishes, it assumes a beautiful variegation of red and yellow.

As to the effects of use and disuse in causing somatic changes, we have very interesting illustrations of them in the differences between the domestic ducks and the wild ones, from which they have been undoubtedly derived. The wild duck, which must constantly be on the alert for enemies, and which uses its wings so much more extensively and its legs comparatively less than the domestic duck, is a much more intelligent fowl than the stupid, well-protected domestic one. The wings of the wild duck are stronger and its legs shorter than those of the barnyard duck. Many other useful illustrations, such as the cattle and goats in India, that have dependent ears; also cats in China, and horses in parts of Russia, whose ears are dependent, could be referred to.

Heredity and variation are coextensive.

The variability of individuals is a well-known fact.

No two leaves on a plant are exactly alike; no two children of the same parents give a perfect resemblance; no two individuals of the same species are molded in precisely the same pattern; of the thousands and thousands of faces that we observe in a city in the course of a year, each has some distinctive peculiarity.

The trained eye of the gardener recognizes each hyacinth among hundreds of bulbs; of the shepherd, each sheep in his flock; of the Laplander, each reindeer crowded in his herd like ants on the anthill.

In speaking of inheritance, at the outset we should carefully discriminate between heredity and pseudoheredity. Physicians constantly write of tuberculosis, lepra, small-pox, and syphilis as hereditary; but it is incorrect and misleading to do so. When a person has syphilis, say, from the earliest existence—that is, from the fertilized ovum by transmission of a syphilitic microbe through the germ cells of the parents—this should be designated by its proper name as congenital bacterial infection. This is totally different from the hereditary qualities that flow from the structural equilibrium following the commingling and struggle for existence of multitudinous hereditary units.

The one set of hereditary qualities is purely germinal; while the other is germinal, profoundly modified by the presence of an infecting microbe.

Many instances of infection of the child *in utero* have been reported in cases of endocarditis, scarlet fever, and small-pox; and there can no longer be any doubt, from experimental investigation and recent observation, that pneumococci, typhoid bacilli, anthrax bacilli, and pus cocci are able to pass to the fœtus through the placenta. But the diseases that develop in this way can be called hereditary with even less semblance of correctness than in the case of the fertilized ovum that is invaded with a microbe.

All of these cases are illustrations of pseudo-hereditary transmission and should, for the sake of clearness and accuracy, be spoken of as *prenatal* infections.

At this stage it may be well to give some illustrations of the transmission of heritages. Mental heredity can be illustrated by studying the genealogies of such persons as Aristotle, Goethe, Darwin, Coleridge, Milton, etc. Probably the Bach family, of Germany, supply one of the best illustrations of the inheritance of intellectual character that we know of. The record of this family begins in 1550, lasting through eight generations to 1800. For about two centuries it gave to the world musicians and singers of high rank. The founder was Weit Bach, a baker of Presburg, who sought recreation from his routine work in song and music. For nearly two hundred years his descendants, who were very numerous in Franconia, Thuringia, and Saxony, retained a musical talent, being all church singers and organists.

When the members of the family had become very numerous and widely separated from one another they decided to meet at a stated place once a year. Often more than a hundred persons—men, women, and children—bearing the name of Bach were thus brought together. This family reunion continued until nearly the middle of the eighteenth century. In this family of musicians twenty-nine became eminent.

Inheritance of moral character is well established.

Heredity, in its relation to crime and pauperism, has been thoroughly investigated by Mr. Dugdale in his most instructive little work entitled *The Jukes*. In this work the descendants of *one* vicious and neglected girl are traced through a large number of generations. It reveals that a large proportion of the descendants of this woman became licentious, for, in the course of six generations, fifty-two per cent. of the females became harlots and twenty-three per cent. of the children were illegitimate. It shows also that there were seven times more paupers among the women than among the average women of the State, and nine times more paupers among the male descendants than among the average men of the State.

The inheritance of physical peculiarities is so obvious as to need no illustration. Among the ancients the Romans stereotyped its truth by the use of such expressions as the *labiones,* or thick-lipped; the *nasones,* or big-nosed; the *capitones,* or big-headed; and the *buccones,* or swollen-cheeked, etc. In more recent times we read of the Austrian lip and the Bourbon nose.

In the fertilized ovum heritages may be augmented, as where fleet horses are bred with fleet ones, until, by careful selection, generation after generation, a progeny may be secured much more swift than the original stock from whence they were derived. In the same way good milch cows have been produced.

Again, at times, heritages may be neutralized; they may be blended, as in the color of the skin; they may be mutually exclusive, as illustrated in the color of the eye, or where the white game bird and black one are crossed, the young are either white or black, but never blended. Other heritages may be prepotent, as, where the silky variety of fantailed pigeon is mated with any other small-sized variety of pigeon, the silkiness is invariably transmitted. A most interesting case of prepotency in mankind, mentioned by Ribot, is that of Lislet-Geoffrey, an engineer in Mauritius. He was the son of a very stupid negress and an educated white man. In physical constitution he was as much a negro as his mother; he had the woolly hair, the features, the complexion, and the peculiar odor of his race. He was so thoroughly a white man as regards intellectual development that he succeeded in vanquishing the prejudices of race, so strong in the French colonies, and in being admitted into the most aristocratic houses. At the time of his death he was Corresponding Member of the Academy of Sciences.

In this, it will be observed, we have prepotency in the mother's physical constitution, and in the father's intellectual characteristics.

The struggle of heritages in the impregnated ovum may lead to such structural changes of the nucleus, and therefore of the cell, as to develop the most marked variations—such variations as the biologists call sports.

In the latter part of the eighteenth century the farmers of Massachusetts had flocks of ordinary sheep on their farms. These sheep were continually jumping fences and getting on neighboring farms. They were the source of many disputes and much irritation between neighboring farmers. Finally, one of the sheep had a lamb which, when grown, displayed well-marked peculiarities (a sport). It had a longer body than the ordinary sheep and shorter legs, which were bowed. It was noticed that this sheep could not get over the fences. The cute Yankee farmer, noticing this valuable peculiarity, carefully preserved this peculiar sheep and from it was ultimately derived, by careful selective breeding, a special variety known as the Ancon sheep.

The germinal variations resulting from the mixing of two separate hereditary masses by impregnation find their expression in the most varied qualities of the minds and bodies of developing children. If the variations are not especially marked, they are looked upon as normal and attract no special attention.

But if the variations are so pronounced as to compel attention and at the same time it is known that they are useful, they are spoken of as talents, or, on the other hand, if they are harmful or useless, they are designated as pathological or monstrosities.

These are truly what the biologist calls sports; and to those classes of sports that occur as specially gifted in human culture, in the varied fields of science, art, or literature, we assign such a person as Shakespeare, and call the remarkable variations embodied in him genius. On the other hand, such variations as lead to certain forms of pigmentary degeneration of the retina, and to Daltonism, to dyschromatopsia and achromatopsia, to certain supernumerary glands, polydactylism, and such like, which are either useless or harmful, we designate as pathological cases or monstrosities.

Heritages may be latent—that is, they may appear late in life, or in the offspring, or, still again, in remote descendants; in the latter cases the heritages are spoken of as reversional or atavistic.

Latent heritages are well illustrated by a study of secondary sexual characters as developed at puberty.

Among our barnyard fowls, the hens often, when they have atrophy or degeneration of the ovaries, although up to this time they have laid eggs for years, stop this function, put aside the plumage and appearance proper to their sex, and don more or less completely the garments of the rooster. Thus females have latent in them many secondary sexual characters of the male. For similar reasons the male develops, occasionally, female characters.

This latency is illustrated again in deer. In most species of the deer tribe the males alone possess antlers, yet it is a well-known circumstance that in females with degenerations of the ovaries rudimentary horns that are never shed appear. A study of congenital color blindness illustrates beautifully latent heritages, showing how the females of one generation may be free from the malady and the males of the next afflicted.

Much that is speculative and fanciful is included under the subject of atavism, and the safest plan for pathologists, in considering any abnormity, is to remember a golden rule of Gegenbaur's, that only those structures are reversional which are taxonomically not far distant or phylogenetically not very old. Embryology is also a very important check in considering such subjects.

In mankind supernumerary limbs and digits, microcephalia and microencephalia, have been looked upon as reversions to the simian type.

Lombroso, in contrasting the criminal with normal man, looks upon his *homo delinquens* as an illustration of atavism, contrasting with *homo sapiens*. But, as Ziegler, in his *Pathology*, well observes, many writers have gone too far in this respect and have characterized as atavistic formations various acquired pathological formations and fresh variations of germ cells.

I think one can safely say that supernumerary ribs and those supernumerary nipples and mammary glands along the line of the deep epigastric and internal mammary arteries are truly atavistic structures; also certain muscles normally belonging to those mammalia which come near to man in the scale of relationship, and which appear in man as muscular variations, are reversional.

Children are often born with pigmented hairy patches on their bodies known as moles; sometimes these hairy moles are only of the size of a split pea, in other cases they are several square inches in area, while in rare cases almost all of the trunk may be thus covered. Although many similar pathological cases are often but marked variations called sports, yet the illustrations mentioned are undoubtedly reversional. Of the multitudinous illustrations of atavism that could be mentioned I wish to refer to but one more case.

The conjunctiva is a modification of skin and frequently proclaims its ancestry by reverting to its original form. It is by no means a very rare event to see a patient having a patch of hair-covered skin growing upon the ocular conjunctiva. While a clinical assistant at the Royal Ophthalmic Hospital in London I saw one such case, and Dr. Treacher Collins, the pathologist of that eye hospital, has stated that about twelve cases are seen there annually of this pathological condition, which is atavistic according to Sutton, although it seemingly violates Gegenbaur's rule about phylogenetic remoteness, and may be looked upon by some as a pathological illustration of a sport.

All heritages are derived directly through the germ cells. Can there be any heritages indirectly from the somatic cells through the germ cells? In other words, Can acquired characteristics be transmitted to the offspring? This question has given origin to the battle royal that is still going on between contending schools of biology. It is not my purpose to enter into this fruitful field for discussion this evening. The contending parties have appealed to such biological evidence as is furnished by a study of use inheritance, reflex and instinctive actions in animals, etc., and to such experimental evidence as the induction of traumatic epilepsy in guinea-pigs, a change in the shape of the ear by cutting the cervical sympathetic, protrusion of the eyeball through injury to the restiform body, and such like, noting the effects on the offspring, and have drawn very different conclusions.

As to the transmission or non-transmission of acquired characters, some have maintained that only germinal variations are transmitted (because they believe the germ cells are insulated from the bodily cells, and therefore from somatic influences). For instance, Ziegler, in his work on *General Pathology*, says: "If a disease, such as nearsightedness, is the product of a special inherited predisposition, *plus* the effect of harmful influences which have acted upon the body during life, only that part can be transmitted which was received by inheritance, but not that part which was derived from external influences." In other words, there is no transmission of acquired character. In this belief it will be observed that he follows Weismann.

On the contrary, other investigators, like Darwin and Spencer, teach that somatic variations—the plus element in Ziegler's illustration of nearsightedness—do influence the germ cells (through some such agency as Darwin's theory of pangenesis suggests), and that, therefore, acquired characters can be transmitted. The question is one of fundamental importance, and yet no crucial experiment has been devised or fact observed which can compel the correct answer. The evidence seems to favor the view that acquired characters can be transmitted.

Professor Morgan, of England, has advanced the ingenious theory, which may reconcile the above-mentioned antagonistic views, that somatic variations, in the direction of adaptation, pave the way for germinal variations, so that, while somatic modifications *as such* are not inherited, they are yet the *favoring conditions* under which germinal variations are preserved by the great principle of natural selection. If this is true, as I think it is, then we can safely state that each man in his totality is the resultant of two great factors—heredity and environment.*

Heredity brings down to him the streams of tendency of former generations, often of a healthy and beneficent character, but still more often surcharged with lust and passion, and reeking with disease.

Environment is the cooperating and, to us, vitally important factor, inasmuch as it may supplement and thus reenforce the hereditary tendencies, whether good or bad; or it may even tend to turn them into new channels, correcting the evil or vitiating the good.

Man is not simply a creature of the present, but profoundly a product of the past. Bodily structure, moral and intellectual tendencies, disease, vices, and virtues are all in the marvelous stream of heritage that comes to him from the past. "Diseases that no facts in the individual life can account for point gaunt fingers of blame from one generation to another. Not a murderer is hung, not a daughter starts on the downward way, but a great company, like those who were present at the stoning of Stephen, stand by inaugurating and consenting to the ruin."

Truly has it been said that the past is at work in the present, its powers reaching down through the ages, to all the race, largely molding every human life, touching and influencing every individual's thought and will, and, more than any other force, coloring history.

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* Environment is the sum total of the external conditions of life, such as food, water, climate, occupation, character of civilization, state of morals in society, ideals and examples most frequently seen.

Studies in heredity illustrate most luridly that the continuity of the human race is a terrible but remorseless reality.

If the ignorance and the perverted pleasures of one generation may produce the vices and the crimes and the diseases of another, a question of tremendous import arises: Is heredity as potent in the direction of virtue and health as of vice and disease? At the first look one is almost tempted to answer Nay! for the most striking examples of heredity seem to be in the direction of evil. But this is perfectly natural. Decay is always more rapid than growth. A cherry rots much more quickly than it ripens. Vice and disease spread much more quickly and widely than virtue and health. But all history and all social and medical science teach that vice and disease carry within themselves the seeds of decay, and virtue and health the seeds of endurance and growth.

Through the great Darwinian principle of natural selection, or survival of the fittest, vice and disease will become less and less predominant, and virtue and hygienic constitutions more and more disseminated.

As influencing a man's life and character, which is the stronger factor, heredity or environment? Fatalism or choice? In my own opinion, as the result of long study and reading, where we have a man of "*mens sana in corpore sano*," environment will be the stronger factor whether for good or for evil—that is, in men in general, who have no organic defect, such as insanity or idiocy, and allied affections, the stronger force is environment; but in those having such defect, heredity is the controlling power, and, I may add, the destroying power.

In order to understand the normal actions as well as the abnormal ones of the members of society, and in order, therefore, to understand and inaugurate rational methods of conducting education, minimizing pauperism, vice, disease, and crime, it must be borne in mind constantly that two great streams of tendencies have come down from the ages in the germ cells—what I may call the diseased and animal tendencies on the one hand, and the distinctively human and healthy tendencies on the other.

The most characteristic of the human tendencies are abstract thought and reflection, and therefore the power of choice or will, and altruism.

Also it must be borne in mind that environment is a force of commanding influence. This environment (which the individual may make for himself to a large extent) may be propitious or adverse to the best human and normal tendencies. The relative preponderance of the animal or the human, the healthy or the diseased tendencies, taken in conjunction with the character of the environment, stamp man's actions as normal (and therefore right or wrong) or as abnormal, and therefore as irresponsible.

Not to discriminate between such normal and abnormal persons is not in accordance with either common morality or common sense.

THE CONTRACTILE POWER OF THE SPERMATOZOOID.*

By WILLIAM MOSER, M. D.,
PATHOLOGIST TO
ST. CATHARINE'S, ST. MARY'S, AND THE BROOKLYN THROAT HOSPITALS.

THE spermatozooid consists of (1) a head, (2) a middle piece, (3) a tail. The head is formed of, or rather corresponds to, the nucleus of the seminal cell, and like the nucleus of any cell it is chromophilic—*i. e.*, it has an affinity for certain coloring matter, such as methylene blue, etc. This latter stain is imbibed quite uniformly and readily by the whole head of the spermatozooid. It has recently been demonstrated that this chromophilic property of the head may vary with the stain employed, the anterior and posterior parts of the head not always staining alike, thus suggesting certain microchemical differences. The middle piece, although it may be within the nuclear membrane, is not, at least with methylene blue, very chromophilic. The tail, like the middle piece, if chromophilic at all, is certainly very much less so than the head, if methylene blue is used in staining. The tail (cilium, flagellum), or sarcode prolongation of the cell, is actively contractile and retains this contractility, under certain conditions of temperature and moisture, for a period of days. It is believed by most observers to furnish the propelling force to the rest of the cell. The middle piece, first described by Schweigger-Seidel, was thought by him to be motionless. My own observations are in accord with those of La Valette St.-George, that the middle piece is contractile. The head, which forms about one tenth part of the cell, is regarded as a motionless body by most observers. I take this opportunity to state my belief, as I have already briefly done (*New York Medical Journal*, August 10, 1895), that the head of the human spermatozooid is not a motionless but a contractile body during life. These contractions in the head are not slow but active, the head contracting and expanding within a few seconds. "In man the head of the spermatozoon is a flattened ovoid when viewed from above, being one six thousandth of an inch in length and one ten thousandth of an inch in breadth" (Quain). If viewed from the side, the head appears somewhat pointed or pear-shaped, the larger, thicker end being joined to the middle piece. A slight concavity on each surface of the anterior portion gives a lighter, thinner appearance to that part (Manton). While not denying this, I feel confident that future investigations will confirm the fact that if the head be closely observed in fresh specimens of seminal fluid it will be seen to contract, at times assuming, during contraction, somewhat of a pear shape, to again become round; or within a few seconds it will contract to a narrow body, but soon to expand to its original shape. I say "original shape," which I repeat is round, like the nucleus of any cell when at rest. From these observations we naturally infer that the contractile power of the head (as well as tail) of the spermatozooid may be at play in the penetration of the vitelline membrane. "Such a mode of penetration is not inadmissible, since it is known that the much larger embryos of tænia and trichina make their way without difficulty through the substance of the intestinal mucous membrane" (Dalton).

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* Read before the Brooklyn Pathological Society, June, 1897.

It is also inferred that the migration of the head of the spermatozooid (to the nucleus or germinal vesicle of the ovum), after its separation from the tail, is due to a contractility in the head itself rather than any propelling power imparted from the ovum. Possibly the future will decide these questions by reproducing cell motion on a screen *à la* Edison's vitascope or Lumière's cinematograph, whereby objects in motion present life-like reproductions.*

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READERS' CRAMP—AN ANALOGY.

By EDWARD W. WRIGHT, M. D.,

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The term "occupation neuroses" is a convenient designation for a group of maladies in which certain symptoms are excited by the attempt to perform some often-repeated muscular action, commonly one that is involved in the occupation of the sufferer (Gowers).

For the consideration of the analogy in symptoms, conditions, actions, causes, and effects between the muscles involved in writers' cramp and the ocular muscles, we have chosen, for the present, the title "readers' cramp."

Readers' cramp would include spasm or cramp of the muscular fibres of the iris, ciliary muscle, and of the extrinsic muscles of the eyes. It would not include nystagmus, except miners', the spasm accompanying paralysis of another muscle, or the spasm of ocular muscles in meningitis, chorea, hysteria, or eclampsia, but the cramp or spasm produced by the use of the eyes at near range.

The main aim of the article will be to direct attention to cramp or spasm of the extrinsic muscles.

The typical features of this class of troubles are spasm or cramp, incoordination in the group of affected muscles, paresis in the group, with vasomotor and sensory disturbances.

Any occupation which calls for the excessive use of one group of muscles may give rise to these disorders, but those in which the smaller and more finely coordinated muscular groups are brought into action furnish the highest percentage of cases (Riggs, in Hare's *Therapeutics*).

When we consider the constant and continued muscular effort and exertion of the ocular muscles of those whose occupation necessitates the concentration of the eyes at their work, when we think of the fine adjustment and necessary equilibrium of this group of eye muscles essential for the duties of this occupation, when we remember how complex and delicately balanced are all the movements of the ocular group, it may be expected that spasm or cramp would easily arise.

With a foreign body in the eye we can see the spasmodic contraction of the sphincter of the iris; the effects of a spasm of the ciliary muscle we frequently observe; we can feel the spasm of the orbicularis palpebræ. Is it not safe to infer by analogy that a cramp or spasm of one or more of the extrinsic ocular muscles may occur?

There must be a large amount of coordination taking place in the ocular muscular group in daily life. How, in the various movements of the eye, there must be, so to speak, the most delicate picking and choosing of the muscular instruments; how fine and exact must be the adjustment to obtain and maintain a proper continuous position of the two eyes under every condition!

How much more coordination is required in the eyes than in the hand. Adduction, abduction, flexion, and extension in the hand; adduction, abduction, elevation, and depression in the eyes; but with them, accommodation and convergence. More intricate and complex must be the cells involved in coordination of the eyes than of the hand; more taxing and exhausting to the reader than to the writer.

If "reflex action," "irritable nerve centres," "irregular nervous energy," or "overwork of normal or weak muscles" cause cramps or spasms in other groups, why not in the ocular group, where a muscular equilibrium is more necessarily exact?

If "grief," "overanxiety," "business responsibilities," "an irritative, sensitive neurotic temperament," or "impaired nutrition" are exciting causes at the beginning and continuance of occupational neuroses, why may not the same influence affect the ocular group in the same manner?

Our text-books state that spasm of the extrinsic muscles is rare, and these cases had deviation of the eye—*e. g., vide* Hock.

Readers' cramp is not of that nature producing an overaction sufficient to cause a marked deviation of the eye, but a spasmodic or cramped condition impairing the fine adjustment necessary for comfortable and continuous use of the eyes. Spasm of the extrinsic muscles in readers' cramp is short in duration, provoked by use of the eyes at close range for long periods of time, indicated by "jerking," "twitching," "pulling of eyes," associated with the feeling of eyes "turning," and often accompanied by headache and vertigo. The patient is conscious of great concentration of energy to keep the eyes on the work, resulting in great fatigue or inability to continue the use of the eyes. Besides these, there are vasomotor changes in the conjunctiva, chorioid, and retinæ. On measuring or testing the strength of the muscles for near and far, we find that there is often a weakness of some individual muscle or pair of muscles. There is a lack of harmony in their action, a want of balance even when tested for a moment.

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* Recently Dr. R. L. Watkins has introduced what he terms the micromotoscope for this purpose (*Medical News*).

A person who has hypermetropic astigmatism with some muscular insufficiency wears a proper correcting sphero-cylinder and a well-selected prism. At times there are complaints when near work must be stopped at once, because the eyes "pull and twitch so," or "they jerk and hurt so," or "the letters or words dance so" that the patient becomes dizzy, or can not read or work until the eyes are closed and rested for a time. The sudden onset of one or more of these symptoms suggests a spasm or cramp.

Or a neurotic person of poor nutrition, with some refractive error and some muscular insufficiency, wearing a proper lens and a correcting prism, complains that the use of the eyes for near duties produces, after a time, a feeling as though the eyes were "turning." Is it not likely a cramp or spasm?

Have we not known persons with proper lenses who have reduced the use of their eyes for close work to a minimum, because of the sudden pulling, the sudden jerking, the inability to continue the use of the eyes?

Wearing a proper correction for their refraction and a prism to aid the weak muscles should give a condition practically normal, but the sudden inability to direct the eyes would suggest a spasm or cramp. They rest for a time, the cramp relaxes, and they go on to be abruptly stopped. Some say: "Oh! that's nervousness. You need a stronger prism. You must take ocular gymnastics." Others say: "It is imperative. You must have one of the muscles 'cut.'"

We, as oculists, do not see the patients at the time of the cramp or spasm. They leave the office or studio, the library or piano, the half-finished letter, or the partly read novel, and come to see us; but the cramp has relaxed.

It is interesting and instructive to have these patients come to the office near the end of their "busy day," and read, write, or sew until the troubles of this character come on, and then observe carefully the movements of the lids, iris, and eyes. Give them a page with lines ten to twelve inches long. Observe the movements of each eye, and see if one moves faster or slower than the other. Notice if the movement is steady and gradual, or jerky and irregular. Note if one eye seems to fix better than the other. Have them read under the weak illumination of a candle, and again under the brilliancy of an electric light. Mark the distance of the book from the eyes when beginning to read, and when they complain; also have them read with one eye closed or covered, and most carefully note the movement, if any, of the other.

Careful observation will give some hint of information confirmatory of irregular action, spasmodic or cramped action of some of the muscles of the ocular group.

This class of patients can work with one eye at near range with comfort. By alternating, they can obviate these troubles. This obviates the use of convergence. The rectus internus has only one duty to perform. Less coordination is needed. It goes to demonstrate the importance of the relationship of accommodation and convergence, and the harmony necessary in coaction among the group of ocular muscles.

The fundamental or imperative law which governs the muscles of the eyeballs is that the fovea centralis retinæ of each eye must be fixed on the object observed. To secure such perfect binocular vision the inherent coordinate relations demand very intimate, very prompt, and delicately exact action of every individual muscle (Noyes).

The disturbance of movement in the ordinary amblyopia of strabismus differs in no essential respect from the congenital or early acquired disorder of vision due to anatomo-pathological changes. In the latter (nystagmus proper) there is a constant pendulum movement around the position of equilibrium; in the former, twitching movements to one side, and known as nystagmus-like twitchings. In both forms there is deficient cortical innervation. In true nystagmus there is a steady, constant, uniform disorder of innervation; nystagmus-like twitchings appear in unequal and changing disturbance of innervation—as, for example, in rapid cortical exhaustion after unusual or forced movements (Knies).

In persons whose vision is, say, $\frac{6}{50}$ with correction, with insufficiency of some muscle (latent strabismus), with nervous system debilitated, and the eyes used for unusually long periods, may there not be twitchings, invisible perhaps, but sufficient to prevent perfect and comfortable binocular vision; in other words, spasms or cramps?

The most satisfactory explanation of the cause of writers' cramp is a want of balance of coaction of the various motor centres concerned in the action of writing (Dercum).

May there not be a want of coaction of the various motor centres concerned in reading, and spasm or cramp must follow? May not a cortical exhaustion, permitting the nerve cells to evolve nerve energy excessively and irregularly, produce a cramp in the muscles concerned in reading?

Knies, speaking of disorder of voluntary ocular muscles, says: "In general, spasms play a subordinate part; they are due to irritation of those parts whose destruction would cause paralysis."

Noyes writes: "The statement must also be made that many cases of muscular asthenopia are not evidences so much of defective power of certain muscles as of continued and excessive action or spasm of opposing and dominating muscles. Only in this view can many cases of recovery by prisms and by slight tenotomies be accounted for."

Alexander Duane writes: "It is not unlikely that slight degrees of muscular spasms are at the bottom of some of the cases of heterophoria that we meet with."

Also, finally, it is quite likely that a large number of cases of slight deviation are due to moderate underaction of one muscle combined with overaction (secondary spasm) of another.

The similarity between the constant action of the muscles of the fingers engaged in writing and the constant action of the muscles of the eyes in reading suggests the thought that as the former have sometimes cramp, so may the latter.

Writers' cramp has three chief theories regarding its pathology:

1. A local disease; a weakness in some muscles permits the overaction of their antagonists, which increases the spasm.
2. A reflex action; the result of the stimulation of the sensory nerves in the act of writing.
3. A central origin; a want of proper balance in the coaction of the motor centres concerned in the action of writing.

The latter seems to be the most satisfactory. In the muscular group of the eyes we can have all of the causes present. If the causes be present in the ocular muscles that produce writers' cramp in the hand of writers, can we not have cramp in the muscles involved in reading?

Constant tension of all the ocular muscles at close range for long periods of time, with a weak individual muscle or pair of muscles, with overtaxed nerves, and an exhausted cortex, are the prominent conditions that would lead to spasm or cramp of the ocular group of muscles.

THE
GENITAL PHENOMENA OF RENAL CALCULI.*

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Lest there should arise any misgiving in the minds of my audience for taking up their valuable time with a consideration of a minor feature of an ordinary disease, I must hasten to read the histories of a few cases of renal calculi in which the genital phenomena were the only indications of the existence of the affection and the approach of its most painful manifestation—colic.

Case I.—M. S., a man, single, aged twenty-two years, always healthy, though delicate in appearance. One afternoon in November, 1896, while at work he was suddenly seized with acute pain in the right testicle. The pain was so intense that he was taken home in a carriage and in a condition bordering on collapse. I saw him about nine o'clock in the evening of the same day. He was found very restless and very irritable; pulse 96, temperature a fraction over 100° F. Passed urine quite often without pain. He had vomited once or twice during the evening, while in the interval he was very nauseous. The contour and feel of the abdomen were normal and free from pain or tenderness. Examining the genital organs, the right testicle was found to be the seat of excruciating pain and tenderness, accompanied by swelling and tumefaction. The epididymis was hard, distinct, and equally painful to the touch. The physical appearance and chemical examination of the urine afforded no clew to the possible existence of cystitis or gonorrhœa, past or present. Careful inquiry failed to elicit an admission from the sufferer regarding specific trouble. Yet, in spite of the absence of specific evidence, and with a knowledge of the fact that during the process of acute epididymitis the purulent secretion of the urethra is in some cases arrested, the clinical picture before me suggested the diagnosis of acute epididymitis of gonorrhœal origin—a diagnosis which was distasteful to the young man, as he was on the brink of matrimony.

The therapeutics employed in this case were those I learned to be the best in specific inflammation of the testicle and its annexa—namely, ice externally, salicylate of sodium internally, with support and elevation of the offending organ. Owing, however, to the severity of the pain and extreme anxiety of the patient and his faithful but sad attendant, his prospective bride, I resorted to frequent hypodermic injections of morphine. This condition lasted four days; at the end of that time the young man was attacked by violent pain in the region of the right kidney, radiating down the pelvis and thigh. Half an hour after the onset of this additional misery he passed a large quantity of urine mixed with blood, gravel, and large and small fragments of broken calculi. Simultaneous with the discharge of this *débris* a cessation of hostilities, as it were, was established in the testicle and epididymis. Two days later the patient was out of bed, hale and hearty; the pain, swelling, and diagnosis all vanished, leaving no trace behind them except a lingering, unpleasant recollection in the mind of the medical attendant.

Case II.—J. R., a man, married, twenty-six years old. Had gonorrhœa eight years ago. His wife and two children were healthy. Some time in June, 1896, he consulted me for pain in the right testicle. The pain being subacute, he was able to walk and work. The testicle and epididymis were swollen and tender and somewhat retracted. Although micturition was painful, frequent, and attended by tenesmus, yet an examination of the urine failed to reveal anything but a highly acid reaction. The patient attributed his trouble to two factors: first, excessive dancing, and second, excessive venery, of both of which he was very fond. Not finding a better explanation, I accepted his provisionally.

The treatment consisted of the use of salicylates internally, and a ten-per-cent. ichthyol ointment externally. The treatment was not of much benefit apparently, as his condition grew worse from day to day, until the end of the fourteenth day of the inception of his sickness. On that day he was suddenly seized with intense pain in the lumbar region, shooting along the right ureter, making the testicular pain now insufferable. A few whiffs of chloroform relieved the symptoms, and while remaining under its mild influence a gush of brick-red, turbid urine occurred; a small calculus, which was carried by the stream, remained imbedded in the pendulous portion of the urethra, and was removed with a small dressing forceps. In less than forty-eight hours there was no vestige of orchitis or epididymitis. The patient completely recovered.

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* Read before the New York County Medical Association, June 21, 1897.

Case III.—Mrs. N. B., married, thirty-three years old. Personal and family history good. Was in good health up to a year ago. At that time, December, 1895, she suffered from what her family physician told her was an attack of "acute inflammation of the left ovary." This attack kept her in bed for one week, with ice on the pelvis and morphine suppositories in the rectum. The recovery was perfect. Precisely in the same month in 1896 she had a "similar attack." In the absence of her family doctor I was called to treat her. The patient's condition was as follows: Frequent vomiting, coated tongue, and constipation; pulse feeble and rapid; temperature, 101° F. Extremities cold, face pale and covered with a cold sweat. I was informed that for a few hours the woman "was screaming with pain in the stomach" until she had no more strength left. Examination by palpation revealed extreme tenderness over the left ovarian region. A vaginal examination, conducted under great difficulty, showed an enlarged and exquisitely painful left ovary. I was inclined to accept the diagnosis made by my predecessor a year before under the same circumstances—namely, acute oophoritis—although, it must be admitted, the causes leading to such a condition were not clear. The patient was kept in bed for a week, using hot douches, ice, and morphine. Bowels moved by soapsuds enema, and urine passed frequently, with some pain and tenesmus. At the end of the week, after giving a large and quite warm injection, the woman passed a good quantity of water mixed with gravel and particles of broken calculi. Relief in the ovarian region was immediate. A few days later the previously enlarged and painful ovary could hardly be felt.

Case IV.—Mrs. B. G. This case is almost the counterpart or duplicate of the preceding one. The patient was thirty-two years old, a multipara, who had never had any trouble with her pelvic organs. On the way home from some festivity she was seized with colicky pain in her left ovarian region. No vomiting, but distressing nausea. Pulse, 96; temperature, 100° F. On examination the left ovary was found enlarged and painful. The treatment and progress of this case were identical with those of the preceding one. On the sixth day the patient passed a large quantity of dirty urine containing broken calculi and some blood; she was at once relieved from pain anl tenderness in the ovarian region. The constitutional symptoms also disappeared. In twenty-four hours the ovary returned to its normal size.

These four cases, and one more to be presently mentioned, of renal calculi, their presence and approach manifested by exaggerated genital disturbances, though not constituting a formidable array of clinical evidence to make them of lasting reference in dealing with renal stones, yet the unusual exhibition of one extremely painful symptom disguising and obscuring the real condition of things should render the subject interesting, serviceable, and instructive. I would have no one infer that every instance of sudden onset of pain and swelling of the testicle or ovary attended by no history of sepsis or traumatism is a *bona fide* expression of stone in the kidney, yet I would beg every one to recollect the possibility, occurrence, and combination of such a state of things. It is not a very infrequent observation in genito-urinary clinics—namely, a man comes in complaining of pain in one testicle; on examination the organ is found tender and enlarged, sometimes retracted, with absolutely no known cause to account for it. Salicylate of sodium, or any other remedy that works well in the uric-acid diathesis, is given, and the patient gets better or well in a few days.

Again, whatever was said of the testicle may reasonably be assumed to be true of the ovary. Obscure cases of acute oophoritis might be due to stone in the kidney, as my two cases illustrated, and it is possible that obscure cases of chronic oophoritis are due to repeated reflex irritation of the organ as the result of either renal calculi or their sequelæ.

This suggestion regarding the possible source of ovarian trouble appears to me of vast importance. The literature dealing with such a subject is, however, painfully scanty. The heroic band of gynæcologists are taken up with statistics and abdominal sections. It is only here and there that the wiser, the more thoughtful, and the more conservative men, who, by the way, are an excruciatingly small minority, indulge in a hint as to the possibility of ovarian disease as arising from renal affection, like stones and their complications, or, perhaps, some mathestic or sympathetic condition to which the ovary occasionally manifests a marked susceptibility. We find Dr. H. C. Coe (1) warning that "parotiditis may alternate with oophoritis," so that "this phenomenon might furnish a clew in obscure cases of inflammation" of the ovary; and Dr. Mathew D. Mann (2) and Dr. James H. Etheridge (3) respectively considered "the relations of lithæmia to diseases of the pelvic organs in women," and "renal insufficiency in gynæcological cases." The voice of these men hardly had an echo in the realm of gynæcology.

It must be confessed that in the matter of obscure affections the testicle received greater consideration than the ovary. Whether because the testicle is *extra corporis*, thus being better adapted for examination, or whether because the clinicians are men, the fact remains that many writers of authority recorded cases in which the testicle figured for a longer or shorter time as the primary and sole evidence of some constitutional or remotely local disease—as, for example, gout, rheumatism, parotiditis, and renal stone. But even here there is room for plenty more light.

I shall now ask your indulgence to a brief consideration of the subject as it affects children and infants.

The liability of children to stone in the kidney is an established fact. One writer (4) states that renal calculi "are very common in the children of the poor up to the age of fifteen. The majority of the sufferers from stone in the kidney among the poorer classes are children." "Orchitis," says another writer (5) on diseases of the testis, "may be met with in infants and very young children, and in these cases it is often difficult to assign a cause for the attack. The symptoms were acute and the swelling considerable, but the disease soon subsided, and it was always confined to one testicle." One statement is almost a commentary on the other, and the explanation might be found in the fact that those obscure forms of orchitis therein spoken of are due to the presence of stone in the kidney. From my own experience I can cite quite a unique case:

Child L., two years old, was brought up on bottle and breast. Had several attacks of orchitis, which were characterized by excruciating pain and swelling. Each attack lasted from two to three days; the attacks and their intervals extended over a period of eight months. Each seizure left the testicle more painful, so that it became necessary to protect it against external irritation, as the slightest touch gave the boy considerable pain. On one occasion the child was brought to the office with a history of retention of urine lasting twenty-four hours. I found the bladder quite distended, the right testicle swollen and tender, and the penis somewhat œdematous. On further examination a stone was found imbedded in the bulbous portion of the urethra, which accounted for all the trouble. As it was easier to force the calculus back to the bladder than move it to the meatus, it was so done, and the child was at once relieved. The child had no attack of orchitis since then, now a period of two years.

Can any one doubt that the genital phenomena in this case were the result of renal calculi?

The interpretation of the genital phenomena as an expression, signal, or forerunner of the presence of renal calculi and the approach of renal colic is very much overlooked. Yet I am sure if due significance were accorded to it, at least an attack of colic could be averted in many a case. Old sufferers from stone in the kidney will tell you that the testicle acts as a barometer in foretelling the approach of the storm—namely, the renal colic. The feeling of uneasiness, the dragging sensation, the pain and puffiness of the organ in these old victims, constitute what one might call a testicular aura, which means a great deal to them.

In conclusion, I hope that the subject sufficiently interested you to make it worthy of your study and observation. I limited my remarks on this occasion to acute forms of genital disturbance, leaving chronic conditions for future consideration, when my experience shall be ripe and abundant, as my conviction is that this subject of the uric-acid diathesis in its relation to the renal and genital organs is as yet a *terra incognita:* its discovery and exploration are fraught with importance and interest alike to physician and patient.

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1. *American System of Gynæcology*, vol. ii, p. 862.
2. *Transactions of the American Gynæcological Society*, vol. xx, 1895.
3. *Ibid.*
4. Henry Morris. Keating's *Cyclopædia of the Diseases of Children*, vol. iii, p. 775.
5. G. G. Gascoyen. Cooper's *Surgical Dictionary*, vol. ii, p. 708.—Curling. *A Practical Treatise on Diseases of the Testis*, p. 272, cited by G.

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A STUDY UPON THE DISORDERED CONSCIOUSNESS OF EPILEPSY.

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Although psychologists have stated that consciousness is the power that the cognitive faculty has of knowing itself as the subject of its own operations, yet all who give the subject careful study must be painfully aware that this is only one of the large and increasing class of definitions which never really define.

Consciousness is the ultimatum of mind, and while the latter may be resolved into terms of consciousness, it itself can never be analyzed, as it is the primary unit of mental life, and finite mind can not go beyond that fact. In a measure it is true that consciousness is but the inner reflection of the outer condition of things surrounding the organism, yet this does not place us in a specially new vantage point from which to view consciousness.

Again, psychologists state that consciousness may be regarded by itself apart from any material phenomena, or it may be considered as a shadowy accompaniment of nervous action; but in making this latter statement they warn us from regarding consciousness and its associations with nervous processes in the relationship of cause and effect. While the relationship, either direct or indirect, is decisively proved by analogy, yet the actual process of this transformation from nervous matter to that of psychic life is inconceivable and never will be more clearly known than at present, because this is dealing with the ultimate facts of existence which will always be relegated to the unknowable.

We will hurriedly summarize the present status of our knowledge of consciousness as considered by itself. Throughout the whole of conscious life we know of but two factors—states of mind and change from one state to another.* No state of consciousness exists but that it is bounded by changes, so that our consciousness is really made up of an immense mass of states of mind, and these, with their relationships to one another (thought), comprise consciousness. The periods of time in which a state of change exists in consciousness varies; they are never exactly equal—first one and then the other is uppermost. Obviously, they can not both be present at the same time.

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* Mercier. *Sanity and Insanity*, p. 64.

Feelings are of much more importance and are of greater mental significance to the nervous system than thoughts, although both have motor elements. Again, consciousness may be analyzed in such a light that it will show itself to consist of a succession of feelings alternating with a succession of changes. States of feeling have appreciable duration, but the changes have none, and are consequently not represented in consciousness. This idea is somewhat crudely illustrated by the stereopticon lecture, in which the pictures on the screen represent states of feelings, and the pauses between, the states of changes.

Having stated briefly our knowledge of consciousness as considered by itself, we will now see what association exists between consciousness and its material substratum, nervous processes. It is obviously certain that a relationship exists between consciousness and nerve processes, but as we know that any attempt to solve this relationship would be alike foolish and unsuccessful, we will only speak of those analogies which easily reveal themselves in hasty examination.

Consciousness is only intense as nerve processes are hesitant.* Generally, states of consciousness are most vivid when the muscles show the nervous system to be acting with most vigor, but the muscular movement seen in disease is essentially morbid and not to be taken into account in connection with this statement. Many writers have erroneously stated that the muscular movement seen in epilepsy is only a physiological exaggeration of an otherwise normal activity. We also know that consciousness varies with nervous action, but it is not materially modified by all nervous processes, although these have evidently, at some earlier time, been conscious factors of the complex state, consciousness.

Some writers have stated that as the ultimate destination of all nerve processes is to the tissues of the organism, and as consciousness is the shadowy accompaniment or the summation of nervous action, we can not expect a perfect and normal consciousness when a part of the organism is imperfectly functionating. However true this statement may be, we have no concern here of what a normal consciousness may or may not consist, but rather with the summary of the psychic phase of consciousness as at present adopted by psychologists. It has been proved that vivid consciousness varies inversely as the length of time a nerve process has been in action in the mind. All mental efforts in activity for the first time are attended by very vivid consciousness. A theory has been very carefully worked out by Mercier explaining this statement upon anatomico-physiological grounds, which has been received with considerable favor by scientists. These vivid states of consciousness gradually become less vivid as the mental process becomes more antiquated. Until we become accustomed to the presence of these new nervous states there is a great feeling of conscious effort, and fatigue quickly attends such nervous processes.

When two states of mind are brought into apposition for the first time and a likeness or difference is noticed between them, that process is known as reasoning; but when two states of mind are existent in consciousness in the relationship in which they have previously subsisted in consciousness, that process is known as remembrance. In other words, the revival of a relation is a remembrance. As to the further classification of these into percepts, memories, and ratiocinations, we will not enter.

Reasoning is the establishment of new channels, and consequently is laborious. Remembrance is the transmission of nervous processes along old channels, and, although these have as their basis essential motor elements, yet they are never so real as the nerve impulses themselves or the actual movements which they symbolize. Memory always attends the renewal of old nerve processes, and to be in a perfect high functional state must not only be well stored, but it must be easily reexcitable, and consequently have a multitude of processes in mind. It is urged that the failure of memory seen in epilepsy and kindred mental disorders of brain deterioration is accounted for by the fact of the breaking up of some of these associations.

When memory becomes impaired it calls for a large and increasing conscious effort. This in turn wearies and fatigues mental power; hence the evil effects of strong environments upon people with but small mental capacity. This is commonly observed in epileptics, who when placed under undue mental or physical stress have a great number of fits. New states of consciousness are really new relationships existing between their subjects for the first time, and will finally become unconscious states or relationships if persisted in, and then exist as memories only. We often see that when a nerve process is repeatedly present in consciousness we have a remembrance of that consciousness for a longer period of time than others. This is in the main due to the fact of the multitude of associations which the nerve process forms in the mental activity of the individual. When memory becomes perfect there is no great effort of consciousness.

The amount and kind of consciousness present in nerve discharge and transmission are dependent upon many conditions. There are always to be considered the character and volume of the nerve current, character and kind of neuronic intercommunication, and the newness of the channel which is traversed. Our latter-day knowledge of the anatomy and physiology of the neurone throws a much clearer light upon the physiological basis of consciousness, especially in regard to the communications between neurones.

Much of the elaborated theory of Mercier upon the origin of nerve communications falls into disuse in the new light of the physiology of the neurone, especially his reference to the "rearrangement of component molecules." Such is no longer tenable when we come to know the anatomy as worked out by Ramón y Cajal and Golgi. Although such a crude link as this must be dropped from the new and more definite chain of the physiological union of the dendrites while in activity, yet this need not necessarily be dropped *in toto* when we consider the elaborated theory of Dercum * in regard to the functions of the neurones. The nervous discharge may still be attended by vivid consciousness as the dendrites endeavor to perfect a temporary anatomical or physiological union for the transmission of their nervous discharge; roads may well be made easier the oftener traveled for nerve transmission, and paths may easily be made difficult to be broken away from the more perfectly they become established. Then, too, these channels, like roadways, may well be lost or overgrown by disease.

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* James's *Psychology*, vol. i, p. 124.

All things being equal, the stability and permanence of a state of consciousness is inversely proportional as the idea makes progress in acquiring new associations. One is apt to overlook the profound significance of the fact that the mere mention of the name of any object and its relationship of likeness or unlikeness to another object very inadequately express all the conscious states that have passed through or have been elaborated in consciousness. This is always very crudely expressed in mere formula of words. The lenslike manner in which states of consciousness narrow to a focus in a unity of consciousness describes well a concentrated attention.

Now when we come to speak of the disordered consciousness in epilepsy as being the essential symptom of the disease, we do not intend to state that this is the ultimate symptom, for, back of all such play of disordered psychic life, there must be changes in the component atoms of the molecules comprising the nerve cells; but as this structural disorder is only represented in the functional one of disordered consciousness we are obliged to speak of the tangible and appreciable functional change instead of the vague and somewhat inconceivable anatomical one. Again, we do not mean to state that a disorder of consciousness, as seen in epilepsy, does anything, much less produces the dementia or an actual loss of mental power, but we do mean to say that, figuratively and relatively, this condition portrays the underlying structural change, whatever that may be, which is the real, true, and powerful agent in producing such destructive action upon mentality.

For many years epilepsy has been defined as a disease characterized by "a loss of consciousness and a convulsion." Both of these, for obvious reasons, can not be entirely absent in a true epileptic seizure. Nevertheless, we think too much stress has been laid upon the purely motor side of an epileptic attack. It is true that the muscular convulsion is very prominent, but in the majority of cases this phenomena but faintly portrays the much more important and equally marked change which inevitably takes place in the higher cerebral centres. While the motor symptom of the seizure has many obvious dangers, it is by far the least important symptom of the paroxysm—one which is not materially modified from month to month or from year to year, and yet the epilepsy may undergo many serious modifications, while the convulsion heralds none of these changes. The kind and degree of mental disturbance is by far the most important symptom to be considered in the proper recognition of such a disease. The motor element of epilepsy is no more important than the grave disorders in consciousness and the resultant mental impairment. Symptomatically, epilepsy might be more accurately defined as a disorder in consciousness, as this is the one symptom always present in a seizure, whether it is psychic or commonly convulsive.

In epilepsy we do not have simply a disease in which there is a muscular convulsion—a simple accentuation of a physiological function—but we have a profound mental disturbance, which may or may not be accompanied by perceptible motor phenomena.

We are aware that some authorities state that the motor and sensory symptoms of epilepsy are indissolubly associated and therefore can not be separated. They also state that an epileptic seizure never occurs without some motor manifestation.

While as a theory this may be true, yet in practical observation the motor element of certain seizures is of so little account as compared with the great changes which are manifest in the sensory and psychic life, that they may be disregarded.

If we should formulate a definition of epilepsy it would read: *Epilepsy is a disease characterized by a periodic disordered state of consciousness which may or may not be preceded, attended, or followed by a perceptible or imperceptible muscular convulsion.* It will be seen that this definition states an undeniable fact in so far as it is a symptomatic definition, and makes a disordered consciousness the main basis, which any one may verify from his own experience. It does not require proof, such as it might if we proceeded to state upon what material substratum this disordered state rests. Besides, our purpose in this article is to treat with certain symptoms of epilepsy only and not with its pathogenesis.

At the very beginning of our attempt to define what this disorder of consciousness may be, we are met with the impassable barrier—What is consciousness? When we have stated that the psychological phenomena of epilepsy is a disorder in consciousness, we have then arrived at as nearly complete a definition as it is possible to make.

For convenience, we may say that there are three fairly well-defined degrees of disorders in consciousness present in epileptic seizures: First, entire loss of normal consciousness and of all consciousness properly so called.

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* *American Journal of the Medical Sciences*, August, 1896.

Second, an attenuation of the normal state, although the state of normal consciousness yet remains coordinate and capable of registering faint impressions. Third, an accentuation or exaltation of consciousness. When this condition of attenuation obtains, we see that the state of consciousness is lowered in degree and the mental images received at the time of the attack are shadowy and indefinite. If such an epileptic is asked, soon after his seizure has passed, what has occurred during the attack, in most cases he will be able to revivify those faintly impressed images, whereas after the lapse of a few hours he will not be able to even recall the framework of such mental images. We find the analogy to this in some of the dream states. The third state has for its basis the paradoxical statement that a more or less general lowering of the tone of the higher cortical centres results in an accentuation of the state of consciousness, so that the exalted or unified consciousness received no appreciable mental stimuli or impressions through the normal avenues of intercommunication with the outer world. However lacking in psychological demonstration this latter statement may appear, it gives us the best working hypothesis we have yet found upon which to base the clinical phenomena, as seen in rare cases of somnambulism and allied states of somnambulic epilepsy.

One of the most difficult conditions to recognize or understand in epilepsy is that a state of inhibition or exaltation of normal consciousness may obtain without any apparent convulsion ensuing. During such disordered states the most violent and homicidal attempts may be undertaken. We may find a possible explanation for this latter condition of inhibition in which there is a tendency toward a unity of consciousness in the sudden refusal of certain nerve centres to maintain their activity. It is conceivable that such a sudden withdrawal of nervous activity would be fully as disastrous to normal consciousness as any superfunctional discharge of nervous energy. These are, respectively, illustrations of positive and negative manifestations of the simple law of dynamics.

The entire loss of consciousness is undoubtedly the one most frequently seen in epilepsy. The second is commonly observed when the epileptic has been taking very large doses of sedatives—such as a bromide—and has but slight discharges from the cortical centres. This form makes up the great bulk of those temporary mental aberrations which are occasionally seen in the sane epileptic and are very frequently observed in borderland and insane cases.

Re-enforced, attenuated, and lost conditions of consciousness are not the only temporary mental disturbances seen in epilepsy. These refer entirely to the degree of disorder in the normal state. Those re-enforced states of consciousness in which a tendency toward a unity obtains lead toward true somnambulism, but the more carefully we study cases of this character the oftener we shall find that they lead toward the more common field of automatism. True somnambulism in epilepsy is probably an exceedingly rare condition, and in all suspected cases the person should be carefully watched by a competent person at the time of the night attacks. No diagnosis of such a condition should be based solely upon a nurse's report.

Incoordinated states of consciousness are frequently added to all the abnormal states of the degrees which we have just given above. When the incoordination of consciousness exists alone the manner of its return to the normal state is in marked contrast to the second state of simple attenuation. In this latter state the epileptic, if questioned very soon after the seizure has passed, will be able to give you a fair account of what has taken place during the seizure. But when the first, the incoordinate form, is added, he grasps the disjointed facts very laboriously, as they are slowly buoyed up on the incoming tide of returning consciousness. It may be hours before he can properly relate all that he desires to do of those things which have occurred.

All statements that epileptics may make at these times, after both forms, should be accepted only after great care has been exercised to eliminate all that he may be able to reason out after an attack, for such epileptics are always open to the slightest suggestion. If his attack has not been observed, any after-statement of his feelings and actions at the time of the attack should be received only after the most searching investigation. This fact is so frequently overlooked and disregarded that it is necessary to call special attention to the thought that all ideas are so rich in associations that permanent and suitable superstructures may be built about almost any single one, when sufficiently stimulated or encouraged.

The mental changes noticeable in epileptics are in complete accord with what we might expect to take place. It is impossible for us to conceive of such rapid and often-repeated destructive change occurring to normal consciousness without finding some evidences in the mentality of the patient. The first change noticeable is the inability to return exactly to the normal state, or if it does so, it is accomplished slowly and with less elasticity at each successive attack. Such changes, often repeated, are certain to result in a more or less permanent disability. Again, we see that the changes occurring in the patient's highest nervous centres are much more potent for evil than the simple occurrence of a muscular convulsion, presenting, as it does, a simple problem of muscular dynamics. The mental change which is so often seen in such epileptics is not one of the various forms of delusions seen in other forms of insanity, but it is a progressive mental failure, due to an incomplete return of normal consciousness after so many repeated sudden disorders have taken place for years.

The extreme and prolonged physical prostration does not always find a satisfactory explanation in the muscular convulsion. It usually fails to account for the physical exhaustion so often seen following *petit-mal* attacks; and in some psychical attacks, in which no muscular convulsion is at all noticeable, the epileptic will be prostrated for from twelve to twenty-four hours. After such an attack the patient frequently complains of extreme bodily and mental fatigue, and his movements are always sluggish, awkward, and incoordinate.

The mental failure seen is easily explained upon the basis that these rapid disordered states of consciousness are but partially recovered from after each attack, and memory is the first to suffer irreparably. Almost every epileptic volunteers the information that his "memory is growing weaker," and when any undue mental stress is placed upon him it increases the number and severity of his attacks. Under all conditions, we have seen that the psychological phenomena of ratiocination is a relatively more complex and difficult mental act than is a simple remembrance. And old and comparatively simple acts, when revived, depend upon remembrance and not upon ratiocination, which fact demonstrates that consciousness does not suffer so severe a strain when an act of remembrance is in progress. Complex and difficult environments always call for great conscious endeavor upon the part of any individual, and in the epileptic this is doubly noticeable. The benefits at present obtainable from colonization of epileptics have their intrinsic value based upon this fact where the stress between the individual and the environment is lessened.

It is not an uncommon experience to see an epileptic perform simple manual labor with marked diminution of his seizures, and again, when he attempts work requiring considerable mental strain, his attacks at once return to their former frequency and severity. The burden now placed upon a more or less permanently disordered and weakened consciousness is too severe, and exhaustion and mental failure rapidly obtain.

The mental alienation seen in epilepsy is almost always a simple horizontal reduction in subject consciousness, and, properly speaking, there is but one form of mental disturbance in epilepsy which always has its basis in that of a progressive mental failure. True melancholia in epilepsy is rare, and whenever considerable mental depression is present it generally depends upon some extrinsic cause, such as a hereditary history of melancholia, insanity, or alcoholism. The insanities of epilepsy, when carefully studied, are generally found to possess but few constant systematized delusions. It would seem that the ordinary motor, sensory, and psychical symptoms usually seen in other mental disorders have their equivalents in the epileptic fit. The true mental alienation is almost always one of an acute character, of the nature of acute delirium or acute delirious mania. Distinct paroxysms and decided remissions occur, which present a striking analogy to the epileptic convulsion. This fact has given origin to the theory that such periodic disturbances take the place of seizures, but as yet this remains only as a suggestive fact, Much proof is still needed in its actual demonstration.

We feel that if more attention was paid to the study of the sensory and psychic side of an epileptic seizure, as elusive and difficult of study as the disorder of consciousness may seem to be, such study would materially help in clearing up many of the psychological phenomena of epilepsy which now remain in the domain of conjecture, hypothesis, and theory.

PNEUMONIA
TREATED WITH OXYGEN INHALATIONS.
RECOVERY.

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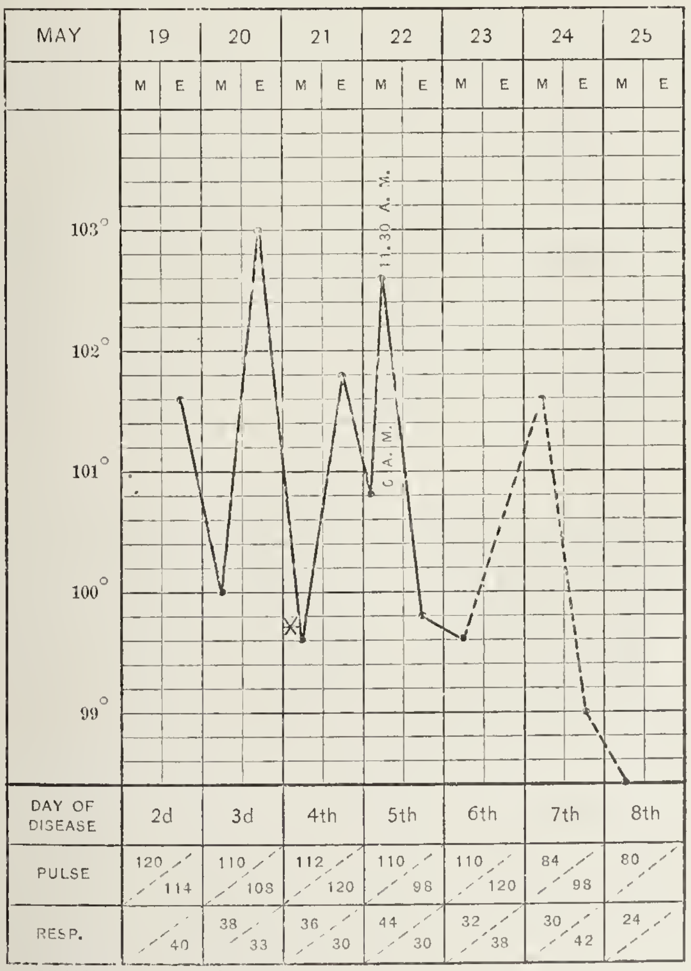
I HAVE thought this case worth recording, from the fact that it was attended with great prostration from the first. In spite of free stimulation, no marked reaction was noted till the oxygen inhalations had been given almost continuously for forty-eight hours, when a distinct improvement in all the symptoms was observed.

May 19, 1897.—G. P., aged fifty-four years, was seized yesterday with a severe chill, cough, and a sharp pain in the right side, increased by deep inspiration. Sputa tenacious and rusty. Impairment of resonance over the lower two thirds of the right back and over the right axillary region. Ordered carbonate of ammonium and liquor ammoniæ acetat., and rum, half an ounce every four hours, and to drink Buffalo lithia water and spirit of nitrous ether freely.



DAY OF DISEASE	2d	3d	4th	5th	6th	7th	8th
PULSE	120 / 114	110 / 108	112 / 120	110 / 98	110 / 120	84 / 98	80 /
RESP.	/ 40	38 / 33	36 / 30	44 / 30	32 / 38	30 / 42	24 /

* OXYGEN INHALATIONS BEGUN

20th.—No marked change, but patient is very weak, and there is marked lividity of the face. The urine is highly albuminous and contains numerous granular and hyaline casts.

21st.—Tongue very dry, and patient is in a very depressed condition this morning. Consolidation of almost the whole right lung. Temperature rose last night to 103° F. Breathing shallow. In addition to the above treatment ordered continuous inhalations of oxygen.

22d.—Pulse, 96; temperature, 102.8°; respiration, 44. Has in the last twenty-four hours taken one hundred and sixty gallons of oxygen. Breathing somewhat stertorous. Some crepitant redux râles heard. Slight congestion of the apex of the left lung. Increased stimulant to one fluid ounce every four hours.

23d.—Respiration, 44; pulse, 84; temperature, 101.6°. Had a better night. Inhaled one hundred and sixty gallons more of oxygen in the last twenty-four hours. Severe pain that was complained of yesterday in the right hypochondrium was relieved by leeching.

24th.—Pulse, 84; respiration, 38; temperature, 100.6°. Patient much brighter, and the lividity of the face has entirely disappeared. Dullness persists over the lower two thirds of the right lung; subcrepitant râles now heard; sputa slightly purulent—sputum croceum. Cough looser; stopped oxygen inhalations, patient having in the last three days inhaled four hundred and eighty gallons.

25th.—Pulse, 72; respiration, 24; temperature normal. Submucous râles. Percussion dullness diminishing, but still marked over the lower third.

From this time the patient's recovery was uninterrupted. The urine, when last examined, was entirely free from albumin and casts.

CONSTIPATION AND RECTAL DISEASES.*

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An incidental allusion to constipation in a paper presented to this body one year ago excited a degree of interest unexpected, but not without significance. The eagerness and unanimity with which this casual reference was singled out for discussion were certainly striking; and the wide variance in the views expressed furnished strong presumptive evidence that our ideas on the subject are both vague and, in part at least, fallacious.

It is more than unfortunate that such confusion should exist upon this subject. From the standpoint of frequency no pathological condition in the whole range of human ailments occupies so conspicuous a position. Either as disease itself or as modifying factor it confronts the physician at every turn from the very outset of his professional career. At all ages, in all climes, and among all peoples, so far as medical history may be credited, the story is the same. Yet in spite of frequency and universal prevalence, and notwithstanding that the morning of the twentieth century is close at hand, our knowledge of this condition is far from satisfactory to the mind which demands a wherefore and a how for every fact.

In respect to ætiology alone, theories ingenious and fantastic have been from time to time constructed until everything, from eye strain to sphincter spasm, has been made to bear the blame. The truth lies in no extreme. Neither a foresight nor a hindsight explanation will suffice. Isolated cases prove nothing, and a squinting glance can only reveal a distorted or, at most, an imperfect image. No theory in reference to disease, however plausible, can stand the test of scientific scrutiny unless the human body—a unit—be its basis.

In view of what has been said this paper has been undertaken with some trepidation. It would scarcely be possible, nor indeed is it desirable, to attempt the consideration of the subject in all its phases. But the limitations imposed by the title chosen render the task less hopeless and will, I trust, permit the development of practical thoughts both in essay and discussion.

Several preliminary items seem to me worthy of mention. In the first place, much of our confusion in reference to constipation may be attributed to lack of definite idea as to what the term means. Neither hard stools, nor dry stools, nor other kind of stools constitute the disease. These expressions are merely descriptive of physical properties, and costiveness includes them all. Constipation is something other and more. Properly applied it is the condition of which costiveness is merely a symptom. Costiveness is not necessarily a disease, constipation always is; and, though usually associated, either may exist without the other.

Again, constipation is a relative term. The line between the physiological and the pathological is not clearly drawn, and remarkable differences in individual habit may not be incompatible with ordinary health. With one person two movements of the bowels a day may be the normal; with another, one in two days. And cases are on record in which not only days but weeks, months, and even years have elapsed without an evacuation, and still the patient survived. So that neither the character of the passages nor the intervals between them can be properly regarded as distinctive of the disease.

What, then, is constipation? It is far easier to say what it is not. The definitions given by the various authorities lack that precision which should proceed from clear-cut ideas on the subject. In all I have consulted, costiveness and the infrequency of passages are the main features. If my conception of the disease is the true one, constipation may be defined as that condition or state of the alimentary canal in which there is modification of function resulting in the retention of fæcal matter.

With this definition for a foundation let us take a brief glance at the general subject, with reference especially to ætiology. The causes of this disease may be conveniently arranged under separate headings, though it is to be understood that several, or perhaps all, may be operative in any given case.

First. Causes springing from the violation of hygienic laws. Under this head would come error of diet and improper habits of life, to one or both of which sources, without doubt, a large proportion of all cases may be traced. Chiefly notable in regard to diet are the two opposite extremes of habitually consuming food which leaves too much or too little residue. Evil results equally from both. Peristalsis is largely dependent on the mechanical irritation of the bowel contents. In the one case this would be interfered with by the excessive accumulation of refuse material; in the other, the requisite amount would be lacking. Here the constipating effects of tea and alcoholic beverages, when habitually indulged in, may be noted.

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* Read before the Tennessee State Medical Society, Nashville, May 13, 1897.

In reference to habits of life, did time permit I should be glad to dwell at some length upon this point. Its importance as a factor in the production of constipation is paramount. The expression of the old physician to the effect that if his bowels moved naturally in the morning he felt confident he would not die that day, contains the germ of a profound truth. Yet it is a question whether it is fully appreciated even by the profession. In the hurry and turmoil of modern life, particularly in the large centres, attention to this function is made a matter of convenience, and disease is the harvest of neglect.

Later on, under the head of treatment, I shall have occasion to refer in more specific terms to the hygienic phase of the subject. The remaining causes deserving of special mention, as scarcely pertinent to the purposes of this paper, may be passed with briefer allusion.

Second. Defective innervation. This would manifest itself either in (*a*) atonicity of the muscular coats of the intestine, resulting in decreased peristalsis; or (*b*) in diminution of secretion. These conditions (for they usually coexist) may be primary or consecutive. If the former, originating either in central lesion or from reflex influences, the constipation develops because of them. If the latter, they develop because of the already existing disease.

In this connection paralysis may also be mentioned as a cause. This contingency should always be borne in mind and the helpless patient protected from ills of which he is both ignorant and innocent.

Third. A more obvious cause of constipation is the habitual use of drastic purgatives. This pernicious practice, already alarmingly prevalent, is constantly on the increase. Unless discernment characterize their choice and prudence their employment, it may be broadly stated that the drugs of this class merely serve to increase the condition which calls for their use.

Fourth. Diseased or debilitated states of the general health must also be reckoned as causative factors. Of these, anæmia, laxness of the abdominal walls, obesity, diabetes, and great bodily weakness from any cause deserve notice.

Finally, in reference to ætiology, I merely mention mechanical obstruction. This may occur at any part of the intestinal tract and from a great variety of causes; but its consideration is not embraced in the scope of the present theme.

Now we come to the subject proper. The relations between constipation and diseases of the rectum are not only intimate, but especially notable in that either may be cause, effect, or both, with reference to the other. I know of no other conditions in which this relationship is so clearly marked and so frequently exemplified. With respect to rectal diseases, it is a rule to which there are but few exceptions that every lesion in the entire category may be caused directly or indirectly by constipation. With respect to constipation, though perhaps not so generally recognized, it is capable of demonstration that rectal disease often stands to it in the light of causative factor. And either effect once established reacts powerfully and positively in intensifying the very condition which gave rise to it.

Considering constipation first in the active or causal rôle, the propositions stated are easy of verification. That venous congestion is the great underlying factor in the production of rectal diseases, both individually and as a class, those who have given serious thought to the question will require no proof. The anatomical position and structure of the rectum, together with its peculiar function, render this to greater or less extent its normal condition. Constipation augments it. A collection of fæces in the colon or sigmoid acts as an impediment to the return blood current; and the dislodgment and extrusion of such accumulation, requiring, as it does, the cooperation of the powerful abdominal muscles, must result in converting passive into very active congestion, at the same time furnishing the means for the infliction of various forms of traumatism. If the fæcal mass, itself normally of firm consistence and more or less nodulated, contains a projecting foreign body, injury must follow its passage. Fissure, hæmorrhoids, proctitis, ulceration, abscess, and fistula are the more conspicuous lesions which may be traced directly to congestion, traumatism, or the two acting in conjunction.

The present unsettled state of our knowledge as to the ætiology of malignant growths permits no definite assertion. But discriminating observation with reference to their favorite sites justifies the assumption that mechanical irritation is a factor both constant and noteworthy. Statistics show that some three-per-cent. of all cases of cancer are located in the rectum. If friction may be admitted as a causative factor, the function of this organ, particularly when it has to do with costive stools, would render it an ideal situation for the development of this disease, and the wonder is that the proportion is not greater. To place malignant growths, therefore, in the list of rectal diseases for which constipation is at least in a sense responsible, seems to be entirely in keeping with the most advanced teaching on the subject.

The analogous nature of the gross lesions resulting from syphilitic and tubercular deposits in this locality would warrant a similar deduction in regard to them. But, attractive though the question is, it must be passed with these few comments.

Turning now to rectal diseases as a cause of constipation, two considerations under this head are worthy of special note. The first is pain. In those lesions situated about the extremity of the rectum pain is practically always a prominent symptom, and the passage of a stool of even normal size and consistence exaggerates it tremendously. After one such experience, if possible to prevent it, a will almost superhuman would be required to undergo a second. Remembering that defæcation is in large measure a voluntary process, this is an item of greater import than might at first sight appear; and, while applicable, perhaps, with special force to children, so long as human nature shrinks from suffering, painful affections of the rectum and anus must be recognized in the ætiology of this disease.

The second consideration is the influence of the reflexes from rectal lesions in the production of constipation. Here we enter upon uncertain ground. Very little is really known about the reflexes. Theories innumerable have been and are being advanced, until it almost seems that every pathological phenomenon not otherwise explicable is to be laid at their door. This tendency has worked to the disrepute of an ætiological element which, though little understood, is yet both potent and pronounced. General discussion of the subject could scarcely be undertaken in the time allotted to a separate paper. But a few practical remarks with regard to the mechanism and manifestations of rectal reflexes seem absolutely necessary to comprehension of the idea before us.

The pouch of the rectum derives its chief nerve supply from the sympathetic system through the pelvic plexuses; the portion embraced by the sphincter muscles and the tissues of the anus almost entirely from the cerebro-spinal system through the fourth sacral and internal pudic nerves. The former, presiding over the functions of organic life, has to do largely with secretion and involuntary motion. So that a reflex originating in the sympathetic area, if referred to the intestinal tract, would express itself in stimulation of the secretory apparatus or in increased peristalsis. Laxness would be the natural consequence.

On the other hand, a reflex originating in exposure or irritation of a nerve fibre in the anal canal would manifest itself either in pathological sensation—*i. e.*, pain—or in overstimulation of a voluntary muscle. The latter is the point to which I would call especial attention. Any lesion (usually painful) of the terminal portion of the bowel, notably fissure, irritable ulcer, or inflamed hæmorrhoids, supplies the occasion of the reflex, and the external sphincter is generally the muscle upon which it expends itself. The effect, if long continued, is irritability and hypertrophy of this muscle. When this occurs a mechanical impediment to defæcation has been established and a condition of costiveness eventually merging into constipation ensues.

Another cause of this condition perhaps more frequently in evidence is neglect. When in response to peristalsis the fæcal mass leaves the sigmoid and descends into the rectum, a certain amount of irritation is excited by its presence and desire to go to stool is felt. The only barriers to immediate passage are the sphincter muscles, by means of which Nature and the will act to the welfare of the individual and in the interest of society. If the inclination is resisted, the fæces are returned to their normal receptacle in the sigmoid flexure and the desire passes off, not to return, most probably, for twenty-four hours. But as the accumulation increases from day to day the reverse peristalsis does its work less perfectly, and a portion of the fæces remains in the rectum, where, impinging upon the delicate and sensitive mucosa covering the sphincters, reflex contraction of these muscles is excited and maintained. In this way, just as from painful lesions of the anus, a condition of irritability and hypertrophy is produced. This is a cause of constipation which I am persuaded is not duly appreciated. Yet in many cases all treatment will fail of its object unless this condition is first remedied.

Before leaving the question of the reflexes I may be permitted to mention, without comment, the unique and rather remarkable experience of a prominent and honored member of this society who has reported a number of cases of chronic constipation due to eye strain and relieved by properly adjusted lenses.

Coming now to the treatment of constipation, my object shall be mainly to indicate principles, trusting to the discussion for the development of details. Considering first the general subject, the essentials may be very concisely stated: If the diet is at fault, correct it. If the habits of life are improper, let them be modified. When these fundamentals have received attention, medication may be thought of. Purgatives naturally suggest themselves first in this connection. Their proper field of application is a very limited one. It may be tersely expressed: In the beginning, to relieve the costive condition; afterward, only when it recurs and other measures fail.

When the cause can be traced to defective innervation, two principal indications are to be met in the treatment: First, the reestablishment of the intestinal secretions; and, second, restoration of the muscular tone. For these purposes a great variety of therapeutic resources are at command. Wisely selected, medicines are useful, but not to be relied upon. In conjunction with them, the diet and habits of life having been carefully regulated, the various non-medicinal agencies, such as methodical exercise, massage, and electricity, are to be borne in mind and employed as indicated. Of course, the general health will be looked after by the astute physician, and any dyscrasia or cachexia receive due attention.

Turning now to the consideration of constipation resulting from rectal diseases, we have, as the first indication of treatment, removal of the cause. But I wish especially to emphasize that this will not often be effective unless at the same time divulsion of the sphincters is practised. In no other way can the irritability and hypertrophy, nearly always present, be overcome. If this condition is not overcome, no line of treatment, however scientific and however faithfully applied, is likely to prove successful. The divulsion may be accomplished either gradually by means of bougies, or forcibly under anæsthesia. The former method has the advantage of perfect safety; the latter, of time saved and, if thoroughly done, greater permanency of result.

Concluding, I take the liberty of recurring for the purpose of emphasis to the feature which to me is the most important connected with this subject. I allude to violation of hygienic law. My study of this question has convinced me that of all the causes of constipation those most frequently operative are chargeable under this head. So strong is this conviction that in the early part of my lecture course on this branch I am accustomed to devote the greater part of an hour to the hygiene of defæcation. Though a somewhat homely topic, I confess, as bearing directly on the subject in hand, I may be pardoned for presuming to offer in this presence a brief summary of the more salient points of that lecture:

1. Regularity of habit. This is all important. In regard to habits in general, man first creator, then creature.
2. Exclusive attention to the act. The water-closet is neither a reading nor a smoking room, though daily used as both by some.
3. Sufficient time to be allowed. Haste leads to straining, and straining is directly responsible for many rectal troubles.
4. The act not complete with one dejection. "Still there's more to follow."
5. Proper detergents important. The anal tissues are very delicate and tender. Soft materials. Printed paper is especially to be avoided; even corncobs are preferable.
6. This is deserving of special emphasis. Calls to stool are never to be neglected or postponed.

Constipation is the great curse of modern life. Ramifying through every class and condition of society, both potentate and peasant are numbered among its victims. But, somewhat aristocratic in its tendencies, it shows a special fondness for the highborn and the wealthy. Such preference is not to be wondered at when their diet and inactive habits are remembered. Two other factors which need only be mentioned to be appreciated are luxurious water-closets and false modesty.

The most universal and far-reaching in its effects of all human ailments, the question is a pertinent one: Does the medical profession realize its full duty in reference to it? Certainly *not* if preventive medicine embodies the highest ideal of our science.

In the truest sense constipation *is* a preventable disease. To the realization of this end closer attention from the profession and the education of the laity are the crying needs. When these have been met, purgatives will give place to intelligent prophylaxis, and the dawn of the "medical millennium" be one watch nearer.

Therapeutical Notes.

The Treatment of Hydrocele with Carbolic-acid Water.—What appears to be both a simple and an effective method of dealing with hydrocele, says the *Lancet* for August 7th, has been practised for the last two years by Dr. Pilate and Dr. Vissemans in the Orleans Military Hospital. It consists in the washing out of the cavity of the tunica vaginalis—after evacuation, of course—with a weak solution of carbolic acid. The surface is first cleaned with soap and brush and then washed with a solution of bichloride of mercury. The trocar is then inserted, and after the serous fluid has been drawn off warm carbolic-acid water of the strength of three per cent., which has been previously boiled, is injected. This is allowed to come out, and is seen to be turbid, containing fibrinous flocculi. The washing out is repeated four or five times until the liquid emerges from the cannula quite clear. The instrument is then withdrawn and the puncture closed in the usual way, a suspensory bandage being put on. Owing to the anæsthetic effect of the carbolic acid the patient feels no pain. Some further effusion into the sac usually occurs in four or five days, but this soon subsides and the patient can resume his ordinary work. He is advised, however, to continue to wear the suspensory bandage for a time. This treatment has proved quite satisfactory, but is recommended only in simple cases occurring in young subjects.

Adhesive Plaster for a "Stitch in the Side."—Solberg (*Norsk Magazin for Laegevidenskaben*, 1896, No. 6; *Deutsche Medizinal-Zeitung*, August 5, 1897) reports that, in a case of pneumonia with severe pain in the side in which he could not resort to the injection of morphine, he applied a strip of adhesive plaster and the result was surprisingly prompt, as in cases of fracture of a rib. He has since employed the plaster in six other cases of severe pain in the side occurring in the course of pneumonia. In four of them, in which the inflammation was in the lower lobe, the improvement was notable. In another case, in which the "stitch" was really in the scapular region, alleviation was effected by applying the strip of plaster directly beneath the axilla. In the sixth case, in which the "stitch" was not severe and the strip was removed at the end of a day because the patient felt a little constrained by it, it was applied again at the patient's request. Even the dyspnœa and the cough seemed to be mitigated, according to Solberg's observation and the patient's own statements. The strip used was of American adhesive plaster, not more than an inch and a half wide, applied as in cases of fractured ribs.

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THE CORRECTION OF THE DEFORMITY OF POTT'S DISEASE.

DR. CALOT, of Berck-sur-Mer, presented before the Section in Surgery of the Twelfth International Medical Congress a communication intended to restrain the zeal of surgeons who may be inclined to be too venturesome in attempts to correct angular curvature of the spine. Dr. Calot's remarks have been printed and circulated by the *Agence centrale de la presse scientifique*, which is a department of Dr. Marcel Baudouin's *Institut de bibliographie*, and it is to be hoped that they will be read extensively. In attempts to do away with the hump, says Dr. Calot, we must proceed slowly and carefully. The procedure first employed by him, he says, seemed to involve too much force; accordingly he has so modified it that it lasts several seconds and is carried out without any shocks and with extreme gentleness. Extension is applied to the vertebral column to the extent of from forty-five to a hundred and thirty pounds, according to the age. This traction is followed immediately by the application of an assistant's thumbs, one on each side of the hump, by which a pressure of from thirty-three to sixty-six pounds is exerted. That is all that is done in the way of reduction; the plaster apparatus is applied immediately.

Dr. Calot feels sure that the traumatism inflicted by such a procedure is absolutely insignificant and incapable of ever leading to an accident. By means of it, he says, the complete effacement of recent deformities may be effected, and in the case of old ones we should not attempt to accomplish more than it will suffice for, at least on the first trial. In these advanced cases the plaster jacket may be removed every three or four months, and the application of traction and pressure repeated. In cases that wholly resist this gentle treatment, says Calot, we must be very circumspect if they are really cases of Pott's disease; but manipulations two or three times as vigorous are permissible in the treatment of spinal curvatures that are not of tuberculous origin, scoliosis, for example.

He closes with the statement that the treatment may be carried out by any physician, and predicts that after its general adoption all cases of incipient angular curvature of the spine will be cured without deformity being left, for practically all children affected with the disease are now brought for treatment while yet their hump is at most of but a few months' duration.

CARBOLIC-ACID GANGRENE.

PHYSICIANS can not too often caution the public against the prolonged topical application of carbolic acid even in the weakest solutions. The occurrence of gangrene as the result of such application is undoubtedly much commoner than would appear from the literature of the subject, partly because in a large proportion of the cases the acid is used by laymen without the advice of a physician, and partly because the gangrene is often attributed to some other cause. Such at least is the opinion of Dr. J. Lévai, of Budapest (*Pester medicinisch-chirurgische Presse*, 1897, Nos. 8, 10, 11, and 12; *Centralblatt für Chirurgie*, August 14, 1897), who, among 20,417 patients treated in the surgical service of a hospital belonging to the Allgemeine Arbeiterkrankenkasse, has observed carbolic-acid gangrene in twenty-six cases—in twelve after the employment of weak solutions, and in fourteen as the result of the use of the concentrated acid. In nearly every instance the drug was used without medical advice, in the form of a solution kept applied continuously. In some of the cases it caused mummification of the soft parts, but in most of them it gave rise to gangrene of the whole or a part of a finger through its entire thickness.

Lévai has been able to find records of only forty-two cases of carbolic-acid gangrene in literature, but the same number of the *Centralblatt* in which an abstract of his article appears mentions also a case reported by Morestin (*Bulletin de la Société anatomique de Paris*) and three cases observed in the course of six months by Czerny (*Münchener medicinische Wochenschrift*). Morestin's patient was a child, two years old, to whose middle finger the mother had kept a solution, apparently very weak, applied for twenty-four hours. Mummification took place, also exarticulation of the finger at the junction of the first and second phalanges. Czerny makes his cases the text for a renewed warning to the profession and the public against the use of even the weakest solutions for continuous application. Lévai's article closes with an account of his experimental confirmation of this clinical experience, showing that it is really the acid that is the cause of the trouble.

Carbolic acid is the germicide with which the public are best acquainted, it is the one that first presents itself to the lay mind in case of a wound, and it is a drug that almost anybody can obtain without trouble. It is highly important, therefore, that the danger here pointed out anew should be made known to the community extensively.

MINOR PARAGRAPHS.

THE INFLUENCE OF THE THYREOID GLAND AND THAT OF THE TESTICLES ON THE STATURE.

At a recent meeting of the Lyons National Society of Medicine (*Gazette hebdomadaire de médecine et de chirurgie*, July 29th) Delore presented a dwarf, twenty-five years old, who appeared to have no thyreoid gland. On the other hand, his testicles were much larger than natural. He looked like a boy twelve or fourteen years old, he was less than four feet in stature, and he was defective in intelligence. He came from a goîtrous locality and one of his brothers had goître. His growth had been normal up to the age of fourteen years, and then it had stopped, so probably his athyreoidism was acquired rather than congenital. Such a case, Delore remarked, would go to sustain Poncet's opinion that abundance of the testicular juice diminishes the growth, while excess of thyreoid secretion increases it.

DELIRIUM TREMENS DUE TO PARALDEHYDE.

Reinhold (*Therapeutische Monatshefte*, June, 1897; *Wiener medizinische Blätter*, July 29, 1897) relates the case of a patient, forty-one years old, who was addicted to taking paraldehyde, and had taken as much as two ounces in the twenty-four hours preceding his admission. He was very much depressed, his speech was labored, and there was decided tremor of the tongue and hands. On his being deprived of paraldehyde, epileptoid attacks occurred. Wine, diuretics, bromides, and lukewarm baths were prescribed. There were transitory periods of agitation with delusions of persecution and visual illusions. Reinhold advises against the free use of alcohol and bromides in such cases and says that, if they are not employed, the epileptoid seizures may perhaps be avoided altogether. Sleep is to be procured by means of sodium bromide and trional. The diet should be generous, the bowels carefully regulated, and metabolism promoted by hydriatic measures. The patient should not be dismissed until his sleep is normal.

THE TOAD AND THE SALAMANDER AS DRUGS.

Hewlett (*Science Progress*, July; *Lancet*, July 31st) shows that the old practice of prescribing preparations of the toad as remedies for dropsy was not so absurd as might at first appear, for, as he has shown, a substance is secreted by the toad's skin that is very like digitalin, and hence may have a favorable effect in cases of cardiac dropsy. It would appear that the active principles of the venoms of the toad and salamander are totally different substances from those of snake venom, the former being alkaloidal, while the latter are proteid in nature. Curiously enough, the venom of the toad and salamander is fatal to the animal which secretes it only in comparatively large amounts. The salamander appears to be remarkably refractory to certain poisons; it is only completely "curarized" by forty-three milligrammes of curare, while morphine is apparently quite inactive. It has been demonstrated by actual experiment that the salamander's blood and blood serum act as an antitoxine toward curare. The article seems to show that the belief of the ancients in the venomous nature of the toad and salamander was not altogether devoid of foundation.

A CONGENITAL COMMUNICATION BETWEEN THE CARDIAC VENTRICLES WITHOUT CYANOSIS.

Keim (*Gazette hebdomadaire de médecine et de chirurgie*, July 29th) reported a case of this anomaly at a recent meeting of the Paris Anatomical Society, and presented the heart. It was that of a child, three months old, that had been admitted into a hospital in a state of general infection and having an amount of fever that was not accounted for by any discoverable pulmonary or intestinal trouble. There was a double rasping cardiac souffle, heard most plainly in the second and third left intercostal spaces, near the median line, of a quality comparable to that of a pericarditic friction sound. After death the left ventricle was found slightly dilated, and there was an opening (of a size not stated) in the interventricular sæptum.

THYREOIDECTOMY FOR EXOPHTHALMIC GOÎTRE.

At a recent meeting of the Paris Academy of Medicine (*Gazette hebdomadaire de médecine et de chirurgie*, July 29th) Doyen reported that he had practised thyreoidectomy in the case of a woman, leaving a small portion of healthy thyreoid substance, and the symptoms had subsided. Then the patient had submitted herself to the thyreoid treatment and the grave symptoms had reappeared; she had given up the treatment and her recovery had since been maintained. Doyen presented a second patient that had been cured in the same way. He is convinced that exophthalmic goître is due to an exaggerated thyreoid secretion, and argues that thyreoidectomy is its true treatment. This operation, whatever may be said of it, he asserts, is not grave, at least not so severe as resection of the cervical sympathetic nerve, which, he predicts, will soon be given up.

FLAJANI'S DISEASE.

This, it seems, is one of the names by which exophthalmic goître is known in Italy. Pucci, of Naples (*Gazzetta degli ospedali e delle cliniche*, 1896, No. 52; *Centralblatt für innere Medicin*, July 31, 1897), contrary to most authors, thinks it is often of an hysterical nature; it is generally supposed to be due to a lesion of the cervical sympathetic nerve. Pucci's patient, in the case he reports, was cured with psychical treatment, sodium bromide, quinine, Fowler's solution, and hæmoglobin.

THE HEART'S ACTION IN EXOPHTHALMIC GOÎTRE.

From a number of graphic representations of the heart's action in subjects of exophthalmic goître, Ferrari (*Gazzetta degli ospedali e delle cliniche*, 1897, No. 25; *Centralblatt für innere Medicin*, August 7, 1897) infers that it is not the rhythm alone that is affected by the disease. He finds that the curve corresponds to that shown by Stefani to indicate irritation of the vagus. In one of the cases he mentions a change in the curve after partial thyreoidectomy denotes the cure of the disease.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 7, 1897:

DISEASES.	Week ending Aug. 31.		Week ending Sept. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	34	6	29	6
Scarlet fever	59	3	74	4
Cerebro-spinal meningitis	1	0	1	0
Measles	34	2	41	4
Diphtheria	116	20	111	23
Croup	3	0	0	2
Tuberculosis	181	110	126	102

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the Marine-Hospital Service during the week ending September 4, 1897:

Small-pox—United States.

Birmingham, Ala	Aug. 21–Sept. 1	36 cases.	
Blockton, Ala	Aug. 29–Sept. 1	1 case.	

Small-pox—Foreign.

Rio de Janeiro, Brazil	July 24–31	4 cases.	
Sagua la Grande, Cuba	Aug. 7–21	53 “	3 deaths.
Rotterdam, Holland	Aug. 14–21	2 “	
Warsaw, Russia	Aug. 7–14		5 “
St. Petersburg, Russia	Aug. 7–14	7 “	3 “
Barcelona, Spain	June 1–30		26 “
Odessa, Russia	Aug. 7–14	1 case.	
Bombay, India	July 23–Aug. 3		1 death.

Cholera.

Madras, India	July 24–30	1 case,	1 death.
Bombay, India	July 27–Aug. 3		220 deaths.
Calcutta, India	July 17–24		9 “

Yellow Fever.

Sagua la Grande, Cuba	Aug. 7–21	82 cases,	3 deaths.
Manzanillo, Cuba	Aug. 1–15		5 “

Plague.

Bombay, India	July 27–Aug. 3		18 deaths.

Infantile Scurvy.—The American Pædiatric Society is making a collective investigation of infantile scurvy as occurring in North America, and earnestly requests the coöperation of physicians, by their sending of reports of cases, whether these have already been published or not. No report will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases.

[Signed.]
J. P. Crozer Griffith, M. D., *Chairman*,
123 S. 18th St., Philadelphia.
William D. Booker, M. D.,
853 Park Ave., Baltimore.
Charles G. Jennings, M. D.,
457 Jefferson Ave., Detroit.
Augustus Caille, M. D.,
753 Madison Ave., New York.
J. Lovett Morse, M. D.,
317 Marlboro St., Boston.
Committee.

The American Electro-therapeutic Association.—The next annual meeting will be held in Harrisburg, Pennsylvania, on September 21st, 22d, and 23d. The preliminary programme includes the following papers: Electricity as an Aid in the Treatment of Goître, by Dr. Caleb Brown, of Sac City, Iowa; Chorea, by Dr. Francis B. Bishop, of Washington; A New Electrode for Use with the Static Machine, by Dr. Lucy Hall Brown, of Brooklyn; Some Thoughts and Suggestions on X-Ray Work, by Dr. Eugene R. Corson, of Savannah; Expenditure of Electrical Energy, by Dr. Margaret A. Cleaves, of New York; Molecular Effects of Electricity, by Professor A. E. Dolbear, of Boston; The Influence of Magnetic Fields on Nutrition, by Dr. William J. Herdman, of Ann Arbor, Michigan; Electricity as a Means of Involuntary Exercise, by Dr. J. H. Kellogg, of Battle Creek, Michigan; The Treatment of Urethral Hyperæsthesia in the Male, by Dr. Charles H. Lodor, of Chicago; What has Electricity Accomplished in the Treatment of Mental Diseases? by Dr. Robert S. Newton, of New York; Electric Treatment in Gout and the Uric-Acid Diathesis, by Dr. Robert Newman, of New York; The Sources of Atmospheric Electricity, by Dr. R. J. Nunn, of Savannah; The Electro-therapeutics of Neurasthenia, by Dr. Curran Pope, of Louisville, Kentucky; Ozone in Nasal Catarrh and Pulmonary Diseases, by Dr. F. H. Wallace, of Boston; Medical Electricity, by Dr. W. S. Watson, of Fishkill-on-Hudson, N. Y.; Electricity in Orthopædic Practice, by Dr. L. A. Weigel, of Rochester, N. Y.; The New Electromercuric Treatment of Cancer, by Dr. G. B. Massey, of Philadelphia; A New Electrode, Preventing the Diffusion of the Current—Palliative Electric Treatment of Tic Douloureux of the Face—The Action of the Röntgen Rays on the Vitality and Virulence of Koch's Bacilli in Cultures, by Dr. J. Bergonie, of Bordeaux.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Four Weeks ending August 28, 1897.*

Sawtelle, H. W., Surgeon. Granted leave of absence for thirty days from September 6, 1897. August 10, 1897.

Mead, F. W., Surgeon. Granted leave of absence for three days. August 2, 1897.

Banks, C. E., Surgeon. To proceed to Newport, R. I., for the physical examination of H. L. Peckham, Second Lieutenant, Revenue Cutter Service. August 4, 1897. Granted leave of absence for twenty-seven days from August 9, 1897.

Carmichael, D. A., Surgeon. Granted leave of absence for thirty days from September 15, 1897. August 6, 1897.

Carrington, P. M., Passed Assistant Surgeon. To proceed to Birmingham, Ala., for special duty, and then to rejoin station, Evansville, Ind. August 11, 1897.

McIntosh, W. P., Passed Assistant Surgeon. Granted leave of absence for twenty-one days from August 8, 1897. August 3, 1897.

Kinyoun, J. J., Passed Assistant Surgeon. Granted leave of absence for five days. August 10, 1897.

Perry, T. B., Passed Assistant Surgeon. To rejoin station at Buffalo, N. Y., on return to Evansville, Ind., of Passed Assistant Surgeon P. M. Carrington. August 11, 1897. To proceed to New Orleans, La., and report to commanding officer for duty and assignment to quarters. August 26, 1897.

Vaughan, G. T., Passed Assistant Surgeon. Granted leave of absence for six days from August 30, 1897. August 27, 1897.

Stoner, J. B., Passed Assistant Surgeon. To proceed to Buffalo, N. Y., and assume command of service. August 26, 1897.

Grubbs, S. B., Assistant Surgeon. To proceed to Boston, Mass., and report to commanding officer for duty and assignment to quarters. August 12, 1897.

Society Meetings for the Coming Week:

Monday, *September 13th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

Tuesday, *September 14th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Medical Societies of the Counties of Rensselaer and Ulster (quarterly), N. Y.; Newark, (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *September 15th:* New York Pathological Society; Society of the Alumni of the City Hospital; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Worcester, Massachusetts, District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *September 16th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Cortland (quarterly), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *September 17th:* Yorkville Medical Association, New York (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties.

Births, Marriages, and Deaths.

Died.

Bemiss.—In Ocean Springs, Mississippi, on Thursday, September 2d, Dr. John H. Bemiss, of New Orleans, in the forty second year of his age.

Buxton.—In Milwaukee, on Monday, August 23d, Dr. Luther Buxton, in the seventy-sixth year of his age.

Hough.—In Rahway, N. J., on Wednesday, August 25th, Dr. DeWitt Clinton Hough, in the seventieth year of his age.

McKenzie.—In Nyack, N. Y., on Thursday, August 26th, Dr. Walter McKenzie, in the thirty-seventh year of his age.

Pfister.—In Milwaukee, on Saturday, August 28th, Dr. Rudolph H. Pfister, aged twenty-four years.

Letters to the Editor.

ITALIAN HOTELS AND AMERICAN OPERATING ROOMS.

New York, *September 1, 1897.*

To the Editor of the New York Medical Journal:

Sir: Your last issue, that of August 28th, contains the very classical letter from Dr. Rose, now in Athens. All he says of beautiful Greece I have read with interest and much pleasure. It recalled to my mind the few happy days spent some years ago in that now so unhappy country. But when Dr. Rose says that the tiled floors of his Naples hotel are cleaner than the stone floors in our best operating rooms in this city he evidently exaggerates.

I, too, have stopped several days at a good hotel in Naples, but I can not confirm what Dr. Rose says concerning the floors; he may, however, have been more fortunate in his choice than I was. What I object to is his comparison.

The many American physicians who have visited the operating rooms of Berlin, London, Paris, Vienna, Rome, Naples, etc., will bear me out in my statement if I say that the average modern American operating room compares very favorably indeed with any of the European operating rooms, even of the largest cities, and the equal of such an establishment as the Syms Operating Theatre of the Roosevelt Hospital in this city is not yet to be found anywhere in Europe.

To say that the ordinary tiled floor of a hotel in Naples is cleaner than the stone floor in the best operating room in the city of New York is a serious reflection upon American antiseptic surgery, which has thus far borne a most enviable reputation all over the civilized world. S. A. Knopf, M. D.

OUR CANADIAN BRETHREN.

To the Editor of the New York Medical Journal:

Sir: Those of our profession who had the privilege of attending the recent meeting of the British Medical Association at Montreal could not have failed to be touched by the gracious and whole-souled manner in which they were entertained by their Canadian hosts. It rarely happens that courtesy and hospitality to strangers are more delightfully manifested. The social enjoyments were limited only by the capacity of the guests to take advantage of them. That which is true of the social part of the meeting is equally true of the scientific part, the addresses in two of the three general meetings being by Americans (Dr. Osler being at least resident in the United States), while in the meetings of the sections the part played by Americans, both in the reading of papers and in the discussions, was conspicuous.

Of all the Americans who were there, I know of none who did not come away with a higher estimation than ever of the excellent qualities of our neighbors across the border. Andrew F. Currier, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of May 5, 1897.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

Excision of the Second Division of the Fifth Nerve for Neuralgia.—Dr. Frederick Walker Gwyer presented a woman, sixty-six years of age, a native of Germany, who had been admitted to his service at Bellevue Hospital on November 17, 1896, with the following history: Fourteen years ago menstruation had ceased suddenly, and almost immediately thereafter she had experienced lanciuating pains in the left side of the face. She had consulted several physicians, and had been under treatment for a number of years, the neuralgic pains not only continuing, but becoming more frequent, longer in duration, and more severe.

In 1891 an operation had been performed by Dr. McBurney. It had consisted in raising a flap opposite the spheno-maxillary fossa, dividing and reflecting the zygomatic process of the temporal bone, and allowing approach to the second division of the fifth nerve in the fossa between the pterygoid process of the sphenoid and the superior maxilla. The nerve had then been isolated, hooked up, and a considerable piece removed. The patient had left the hospital quite free from pain, and had continued so for a year after operation, when it had recurred. At about this time the patient had begun to use morphine to alleviate the pain, increasing the dose until, on her admission, she was taking about ten grains a day. From the beginning of 1893 till she had come under his care she had been under treatment—strychnine in increasing doses for several months; electricity for a long time, etc.—but the attacks of pain had increased in frequency and severity. On admission the pain had been almost continuous, and the slightest nervous excitement had been sufficient to excite a paroxysm.

Careful examination had limited the pain to the second branch of the fifth nerve, and on December 16, 1896 he had operated. As a preliminary step, the infraorbital nerve had been sought for at its exit on the face, and a ligature placed about it. An incision had then been made over the upper border of the zygoma and parallel with it, and from the anterior end of this incision another, at right angles to it, had been carried downward and forward for a distance of an inch and a quarter. The zygoma had been sawn through at its anterior and posterior ends and reflected downward with the skin flap. By drawing the temporal muscle backward and keeping close to the posterior surface of the superior maxilla, the bottom of the spheno-maxillary fossa had been reached, the spheno-maxillary fissure recognized, and the nerve laid bare and verified by a pull on the ligature about the infraorbital nerve. Traction on the nerve in the fossa had drawn it slightly from the foramen rotundum, and there it had been divided. The ligature had been removed from the infraorbital nerve, and that nerve divided, and traction on the cut end of the nerve in the spheno-maxillary fossa had brought it and its branches out. The next step in the operation, so far as he knew, was novel. Realizing the thoroughness of Dr. McBurney's operation, and the proneness to reunion of divided nerves, even when long pieces had been removed, he had filled the orifice and neighborhood of the foramen rotundum with a plug of dental composition which was antiseptic and malleable after immersion in hot water. In this case it had been softened in hot bichloride solution, so that the surface might be thoroughly clean. The zygoma had then been replaced and held by two catgut sutures passed through the periosteum, and the external wounds closed with silk, the dressing being iodoform collodion and gauze. Primary union had resulted.

About a month after the operation it had been noticed that the lower eyelid was very œdematous. This had been thought to be due to interference with the circulation, through adhesion of the cicatrix of the wound through which the infraorbital nerve had been reached. The cicatrix had been cut out and, following the healing of the wound, massage had been used with fair success. Accompanying the œdema there had been interference with the facial nerve function, noticeably paralysis of the orbicularis palpebrarum muscle. This was just regaining its action. On January 27, 1897, the patient had been discharged from the hospital, having had no pain since the operation. She had been kept under observation, however.

The selection of the extracranial, rather than the intracranial, operation he thought was justified in view of the large mortality accompanying the latter, the age of the patient, and the seeming limitation of the trouble to the second branch, and the success, even if temporary, in freeing the patient from pain, of the operation done. The Braun-Lossen operation was preferred to the Lucke, because of less disturbance to the muscle attachments and because it could be done with the same facility. Although the field of operation had been small for the great depth at which the nerve lay, an electric headlight had given the requisite illumination, and the work had progressed without hindrance.

It was to be noted that the divided tissues showed at no point marks of a former operation, and the nerve removed had appeared macroscopically to be normal in appearance, thickness, and consistence, and had, no doubt, regenerated completely. Whether it would again unite or not, in spite of the obstacle placed in its path, time only would tell. In another operation he would prefer a vertical incision over the supraorbital instead of a horizontal one, as with such incision there would be less disturbance to the circulation and nerve supply.

The patient had been free from neuralgic pain since the operation, but had lately had sensitiveness under the eye and about the upper and lower lip. As it was still too early for regeneration to be expected, the increased sensibility was probably due to attempts at nerve anastomosis or vicarious function, which might be traced to the facial. The amount of morphine taken had been reduced voluntarily from ten grains to one grain daily. A couple of years must pass before it could be decided whether or not the great length of nerve removed and the plug of dental composition would prevent reunion.

Cyst of the Thyreoid.—Dr. Parker Syms presented a specimen of cyst of the thyreoid gland which he had removed by enucleation. The patient, a man of sixty years, had had good health, and had given a good family history. There had been no evidences of myxœdema; no disturbance of the heart's action—in fact, no symptoms except the dyspnœa produced by the pressure of the tumor on the trachea and larynx. His voice had been but little altered. He had first noticed this swelling twenty years ago. It had steadily enlarged, and, of late, had greatly interfered with his respiration. The operation had been done on March 23, 1897, and the patient had made a comfortable and uninterrupted recovery. As the patient was a stout man, with an unusually short neck, the removal had been more difficult than it otherwise would have been. An incision, five inches in length, had been made in the median line, extending upward from the suprasternal notch. From the upper end of this incision a second one, about three inches in length, had been made, at a right angle to the first incision. These incisions had extended through all the overlying structures. An incision had then been made through the gland tissue, exposing the true cyst wall, and the cyst had been enucleated without removing any glandular tissues. There had been but little hæmorrhage, and that only venous, and easily controlled. The transverse incision and the upper part of the median incision had been sutured, and the former site of the tumor packed. The specimen presented was a large, oblong cyst with a thin wall. It measured five inches and a half in its long diameter, and three inches and a half in its short diameter.

Case of Tuberculous Arthritis of the Hip and Elbow Joints; Excision of Hip and Elbow Joints.—The President presented a patient, a boy about eight years of age, in whom he had performed an excision of the left hip and the right elbow joint for extensive tuberculous osteomyelitis, apparently a sequela of scarlatina.

His history was as follows: Frank C., aged seven years, had been admitted to J. Hood Wright Memorial Hospital on February 4, 1896.

His family history was good. He had generally been a healthy child. Two years ago he had had an attack of chorea, from which he had recovered and had remained well until about four months and a half before admission. At this time he had had an attack of scarlet fever. While convalescent from this he had been taken with pain and swelling of the right elbow joint, and pain in the left knee joint. This had been thought to be an attack of rheumatism.

The pain in the knee had continued after the supposed attack of rheumatism had left him, and this had been followed by the development of pain in the left hip. The hip, his father said, had become so painful on motion that the child had been obliged to remain in bed. During this time he had lost much flesh. About two months ago a swelling on the left thigh had been incised by the physician in attendance, and a good deal of pus and a few pieces of dead bone had been removed. The resulting sinuses had discharged pus freely ever since.

On admission, the body and lower extremities had been considerably emaciated, but the face had been full and like that of a well-nourished child. He had lain upon his back with the left thigh quite strongly flexed, adducted, and rotated inward. There had been apparent shortening.

There had been a sinus on the outer and one on the inner aspect of the thigh, below the hip. Both sinuses had been discharging pus. Dead bone could be felt with the probe.

The right elbow joint had been swollen and tender. The swelling had been spindle-shaped and had felt doughy. There had been tenderness and thickening for quite a distance up from the lower end of the humerus—evidently an extensive tuberculous osteomyelitis of the bones entering into the formation of the right elbow joint. The motion had been much restricted. There had been a range of possibly forty-five degrees. The position of the joint had been very nearly that of right-angled flexion. The pulse had been somewhat rapid; the temperature 99.2° F., and the respirations 26. Urine had been clear, 1.020; no albumin present.

On February 8th, under ether anæsthesia, the posterior incision had been made, the joint opened, and the neck of the femur had been found nearly destroyed, so that it had come away from the shaft like a bone sequestrum. The head of the bone had been freed and removed, and the acetabulum well curetted. The old sinuses had been curetted thoroughly, and the operation wound partially sutured, but mainly packed with iodoform gauze. A plaster-of-Paris splint had been applied over all, with the limb held in corrected position. The patient had recovered well from the ether, and the wounds had granulated rapidly. By February 22d the discharge from the operation wound had been very slight, and the patient's general condition had improved very much. There had been no pain in hip or knee. He had been allowed up on crutches, the plaster splint, of course, being retained.

In March, the boggy areas about the right elbow having become softened, they had been incised, considerable tuberculous pus had been evacuated, and the abscess cavities had then been distended with sterilized iodoform oil, ten per cent.

The patient had been discharged on March 13th, having gained remarkably in flesh, strength, and color. Dr. Hubbard had fitted him with a traction brace for the excised hip, and with this he got about well. There was still a sinus, the granulations in which looked tuberculous.

On April 23d the patient had been readmitted for operation on the right elbow joint, which had appeared extensively diseased. The range of motion had been now limited to about thirty degrees, and the joint had been quite painful at times, so that the patient had held it as quiet as possible. The plaster fixation and the iodoform-oil injections having been ineffectual, excision of the diseased bones had seemed the only alternative. On April 25th, under ether anæsthesia, the usual posterior incision had been made, and the joint excised in the usual manner. The lower end of the humerus had been so extensively diseased that nearly an inch of bone had been sawn off, and the medullary cavity of the shaft curetted carefully. The tissues all about the joint, the fasciæ, muscles, etc., had been extensively infiltrated with tubercular material and had all been cut away, as far as could be seen, with scissors. The whole of the somewhat extensive wound surface had been rubbed with iodoform and the wound sutured except at the centre, where it had been left open for iodoform-gauze packing. The arm had been put up in a position of nearly right-angled flexion in a felt angular splint.

On May 5th the patient had been discharged, the wound being in a satisfactory condition, and he had been instructed to return for dressings. The result of this operation, after a year's time, was now evident. The wound had entirely healed; there were no sinuses; there was fairly firm ankylosis at the joint, which, considering the extensive disease of the bones at the time of operation, was the most fortunate result, because, with a movable joint in this case after such extensive excision, one might expect a flail joint.

The patient had returned to the hospital in August with another abscess on the inner side of the thigh. This had been opened and curetted by Dr. Le Boutillier, who at the same time had explored the sinus over the outer aspect of the hip, and had found and removed some diseased bone. The patient had been discharged on August 30th, when the sinus had been reported to be granulating slowly.

Since that time he had had various abscesses form in the subcutaneous tissues of the body. These had generally been painless and, on being opened, had allowed the escape of flaky pus, characteristic of tuberculous abscesses. At present, there was one cold abscess over the chest wall, which was not especially tender, and over which the skin was not reddened. There was another near the top of the coccyx. In spite of the extensive infection of the connective tissues, both the bony and the subcutaneous, this little patient had enjoyed good health and looked rosy and well. He still wore his hip brace. There was still a small sinus over the hip joint, but his condition was so good that he went to school, and enjoyed himself with the other boys playing out of doors.

The case seemed one of considerable interest, as an example of tuberculous osteomyelitis occurring after scarlet fever, and as an example of recovery from very extensive bone lesions without, as yet, any apparent involvement of lungs or internal organs.

A Case of Tuberculous Arthritis of Hip in an Adult of Thirty-five; Excision of the Hip Joint.—The President presented a second case, one of tuberculous arthritis of the hip, in a man of thirty-five years, in which he had successfully performed excision. The history of the case was briefly as follows: Previous history negative.

About seven months ago he had begun to have pain in the left hip and knee, and had begun to limp. The pain and restricted motion had become worse until about six weeks ago the patient had become helpless and unable to walk. He had noticed a swelling in the groin for at least two months previously, and this swelling had gradually increased in size until, at the time of admission to the hospital, January 29, 1896, it had formed a large fluctuating tumor occupying nearly the whole of the upper, middle, and inner part of the thigh. His chief complaint had been pain in the hip and knee.

An examination of the lungs had been negative. The heart had been normal, and the urine had contained neither albumin nor sugar. Examination of the right hip had shown motion very much restricted and painful; great muscular spasm present on attempts at movement; thigh flexed and rotated inward; knee also flexed. There had been a large fluctuating tumor on the inner aspect of the thigh. Temperature, 102°; pulse, 96; respiration, 36.

The condition of the patient had seemed bad, and, though the diagnosis of tuberculous osteomyelitis of hip had been made, it had not been regarded as wise to do more at first than incise the large abscess of the thigh and see how the patient reacted. Accordingly, the patient had been etherized the next day, January 30th, and the abscess freely incised, flushed, and drained. Large quantities of pus had been evacuated. The condition of the patient had improved at once, and he had begun to put on flesh and increase in strength daily. The pain in the hip had continued, however, and the small sinus had remained.

On March 10, 1896, under ether, excision of the right hip joint had been performed, the posterior incision being used, and the head and neck of the bone cut away with a chisel. The cavity of the joint had contained pus, and the head and neck of bone had been diseased. The head, being very firmly adherent, had been removed piecemeal by chiseling. The acetabulum had also been chiseled. The cavity had been packed with iodoform gauze, and the limb, being held in extension, had been put up in a plaster-of-Paris splint. The wound had granulated finely, and the patient's condition had improved. A sinus had, however, persisted, and dead bone could be felt. Accordingly, in May, Dr. Le Boutillier, who had succeeded the speaker on the service, had cut down upon the bone, removed some fragments, and chiseled out the acetabular cavity. The patient had been discharged from hospital on June 30th, with a very small sinus, but in fine condition, and able to get around on a crutch well. The sinus had soon healed completely. The patient at present showed a cicatrix over his right hip, but no sinuses. There was a good range of motion at hip, so that he could put his foot up in a chair. The shortening, which had not been very great, had been overcome by the high shoe on the affected side. He used a crutch and cane in the street, but got about the house well without them. He was perfectly well and strong, and had no evidences of tuberculous lesions in lungs or elsewhere.

The result certainly had been a good one, and the case was interesting as illustrating the occasional occurrence of a tuberculous hip-joint disease in an adult of thirty-five without apparently other bone or visceral infection, and it showed also a very good result following a successful resection of the joint.

The speaker said that he was convinced that a fatal result would have occurred had he attempted to remove the diseased bone at the first operation, and he thought that, in cases with large abscesses, especially where the patient's general condition was depressed, an operation first to open the abscesses, and a later one on the joint, was the safer method, and the one more productive of good results all around.

Dr. Walter C. Wood said that the cases presented by the president showed the advisability of operating for tuberculosis with marked sepsis at more than one stage, and also the wisdom of not doing too much at one time.

The President said that he was positive that the man with tuberculosis of the hip would have succumbed had the larger operation been done at the first.

(To be concluded.)

Book Notices.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M. D., LL. D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University, etc. Volume II. Diseases of the Respiratory System—Diseases of the Circulatory System and the Mediastinum—Diseases of the Blood—Diseases of the Kidneys—Diseases of the Bladder and Prostate Gland. Illustrated. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. 5 to 941. [Price, $5.]

The second volume of this admirable system is thoroughly in keeping with the standard established by the first volume, and, though we notice some slight unevenness in the volume under review, it is rather dependent upon quantity than upon quality, and perhaps is not to be avoided in a work so comprehensive save by the unreasonable and therefore objectionable expenditure of space. The first chapters of this second volume are evidences of unfortunate condensation, and, though the diseases of the nose, the nasopharynx, and the larynx are scarcely to be treated of exhaustively save in a special work, yet their inclusion in a system of medicine should not involve too great curtailment, a fault which the reader will find it the more difficult to condone in view of the otherwise excellent character of these chapters.

As introductory to the discussion of pulmonary diseases, there is presented a chapter upon the physical signs of pulmonary disease which for logical and clear presentation, as well as for comprehensiveness, is superior to anything which we have recently encountered on this subject. Why it is that this subject is ordinarily so bungled we fail to see, but the larger number of writers content themselves apparently with a tabular or semitabular presentation of this important matter, or else confine their utterances to the most stereotyped and perfunctory expressions, as if the subject was to them as disagreeable as perforce such a treatment of it must be to their readers.

Bronchitis in its various forms is next considered, and then there follows a very interesting and able consideration of asthma and hay fever. Hæmoptysis is briefly though not insufficiently described, and then the various forms of pneumonia. Among the many excellent chapters which this volume contains there is none, we think, more ably written than those upon pneumonia. To be sure, so much investigation and observation have been expended upon the several disorders which compose this group that there remain few opportunities for material variations of opinion; yet, often writers differ as to their ability to present the subject. For clearness and force, these descriptions of pneumonia we think are somewhat unusual.

Emphysema, too, is well discussed, though the description of the pathology in the vesicular variety is scarcely satisfying and certainly not representative or even recognizant of those who hold to productive interstitial inflammation as largely the anatomical cause of the disease. Somewhat limited space is allowed to pulmonary œdema, abscess, and gangrene, and the rarer pulmonary disorders, pneumonoconiosis, syphilis, echinococcus, actinomycosis, and neoplasms, are then briefly discussed. To say that no satisfactory treatment exists for pulmonary actinomycosis is certainly within the truth, but, since nothing remedial is suggested, it is an omission to be remarked upon that the use of potassium iodide is not mentioned, especially when we remember that there are observers who have reported no inconsiderable benefit from the use of the drug. The diseases of the pleura next receive an ample and a satisfactory presentation.

As introductory to the chapters upon circulatory diseases, we have presented a consideration of their physical signs which in every respect is the worthy companion of that upon pulmonary physical signs, and noticeable for the same excellences.

A section on pericarditis follows according to the sequence generally observed, and then the able consideration of endocarditis, the contribution of the late Professor Loomis. The chapters upon cardiac diseases other than endocarditis are remarkable in their completeness and their scope, and, indeed, to our mind, the chapters on circulatory disorders constitute the feature of the volume, a state of things which a very masterly contribution upon the diseases of the blood-vessels does much to bring about. The diseases of the mediastinum are then treated of with sufficient completeness, and then the diseases of the blood. So much attention has recently been given to the study of the blood, and the teaching of what that study has revealed, that one rather insists now upon a greater completeness and excellence of books or chapters wherein these things are discussed, as compared with the presentation of other medical topics. These requirements, however, are amply complied with in the chapters upon the diseases of the blood, and in no composite work do we recall a presentation of the subject more satisfying.

Renal diseases, naturally, demand and receive a considerable amount of space. Their discussion is not less excellent than the standard of this work requires, and as supplementary to them are chapters upon diseases of the bladder and prostate gland. In somewhat unusual sequence, there follows a chapter on abnormities of the urine, a title which explains the uranalytic contents of the chapter, and the volume is concluded by a chapter upon uræmia, which, save for a rather surprising failure to bring out the importance of the high-tension pulse so often present in the acute uræmic condition, a thing which most observers are apt to emphasize, and for a curiously barbaric tendency exemplified in "bromide of *soda*," is a chapter to be commended.

The Menopause. A Consideration of the Phenomena which Occur to Women at the Close of the Childbearing Period, with Incidental Allusions to their Relationship to Menstruation. Also a Particular Consideration of the Premature (Especially the Artificial) Menopause. By ANDREW F. CURRIER, A. B., M. D. New York: D. Appleton & Co., 1897. Pp. xvi–309. [Price, $2.]

THIS is a small book of a little over three hundred pages, covering the entire subject concisely, and at the same time completely, and in a form convenient for reading or reference. It is a valuable addition to the literature of a subject too little studied.

The first chapter is devoted to the history and the general consideration of the subject, and the second to the gross changes that take place in the different organs of the genital tract at the menopause, leaving out largely the microscopical details. It also considers certain pathological conditions of these organs that are often coincident with the menopause, but are not caused by it, and shows that many of the symptoms attributed to the menopause are caused by these lesions, and not by the menopause. The third chapter is given to the consideration of the various factors that have an influence on the menopause and to the changes produced by them. Chapters iv to vi inclusive consider the symptoms of the normal and the abnormal menopause, distinguishing between the symptoms due to the menopause and those produced by some coincident disease. It seems as if a subject so important as the menopause produced surgically should have received more attention than the author has given to it. The last chapter is devoted to the treatment of the menopause. There is some repetition throughout the book, but no more than is necessary to make each chapter complete in itself. Each chapter is divided into a number of sections, and this, with a complete index, makes reference easy. At the end of each chapter there is a list of references to the articles on the subject in periodcal literature. The work contains much of interest, both to the general practitioner and to the gynæcologist. The author has made a worthy attempt throughout the book to eradicate the idea that the normal menopause in a healthy woman is associated with any special danger.

Hysteria and Certain Allied Conditions. Their Nature and Treatment, with Special Reference to the Application of the Rest Cure, Massage, Electrotherapy, Hypnotism, etc. By GEORGE J. PRESTON, M. D., Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore, etc. Illustrated. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. iv–9 to 298. [Price, $2.]

THE merits of this book are considerable. Its literary style is pleasing and clear; its descriptions are well executed; its criticisms of previous writers are judicious; its conclusions based upon the author's personal experience are sound. Any one who reads it carefully can not lay it down without appreciating that it is a skillful attempt at a delineation of the mysterious and interesting condition of which it treats. To say, however, that it satisfactorily fills the gap which has long been conspicuous in our literature of hysteria would be going too far. Its sins of omission are too numerous and too evident for the book to merit such comprehensive commendation.

To understand the conditions which must be fulfilled before any American book can be accepted as a satisfactory treatise on hysteria, it is necessary to have in mind the history of this remarkable disease. The complete development of the present conceptions of *la grande neurose* came as the crown of a life spent in more material fields. Yet the closing years of Charcot's activity were so fruitful that before his death the whole subject of hysteria underwent his scrutiny, and from an agglomeration of symptoms which had previously been regarded as unreal and exaggerated he separated a mental disease which is confined by definite limitations and which obeys recognizable laws. The influence of the investigations carried on under his guidance at the Salpêtrière was quickly felt throughout Europe, with the result that the additional contributions which came from Bordeaux, Montpellier, Nancy, Leipsic, Berlin, and other scholastic centres soon created a comprehensive literature for the malady and insured a general recognition of its nature. In this movement America shared but little. Hysteria has never become a popular subject of clinical demonstration on this side of the water, and its literary history with us remains to be written. So far as we are aware, the only systematic and modern presentation of the disease hitherto available to persons who read only American books is an article by Lloyd in a text-book of nervous diseases by American authors.

A lack of proper instruction and an absence of accessible books of reference render the general understanding of any subject difficult. This is the fate of hysteria in America. For the most of us this multiform psychosis remains a mixture of affectation, exaggeration, and deceit; its manifestations are the voicings of attention-loving females; we believe in voluntary simulation without motive; we scoff at the idea of a limb being paralyzed if it is seen to move; when the patient says "I can not," we accept it as "I will not," forgetting that Sir James Paget long ago pointed out that "I will not" might mean "I can not will." We are, furthermore, too prone to employ the word "hysterical" as a designation for a variety of functional nervous disturbances which are not in any way related to hysteria.

Hysteria is sufficiently frequent in America to make it very desirable that we should have some systematic and generally accessible portrayal of the disease as it occurs here. He who undertakes such a task, however, assumes very considerable obligations. The disease may take on so many forms, its relations with social economy are so intimate, the need of accuracy of diagnosis is so important, that a treatise, to be satisfactory, must be comprehensive, and must present all the essential facts which are known regarding the disease. It is in the obligation of completeness that the author of the volume whose title heads this notice has failed. He has anticipated this criticism by announcing that the book is intended for the "general practitioner." But we fail to see why the general practitioner, when he buys a monograph, should not be entitled to a thorough discussion of the subject upon which he desires to be informed. How signally Dr. Preston has failed to render his work satisfying may be shown by a few examples.

Traumatism is among the most frequent of the exciting causes of hysteria. Aside from its forensic and clinical importance, it furnishes better than any other causal agent a means of understanding the psychological processes which underlie the physical manifestations of the disease. The injury calls a morbid attention to the affected part (traumatic suggestion). After it there are usually several hours or days (period of meditation) during which the patient reflects on his misfortune. Finally, by constant brooding, he comes to believe, although there is no physical injury, that the injured member can not move or can not feel. Nothing could illustrate better the psychic origin of the symptoms. Yet in Dr. Preston's book traumatism as a cause of hysteria is barely mentioned. There is no description of the peculiar yet characteristic way in which it acts, and a few lines are considered sufficient to indicate the difficult questions which arise when a patient with traumatic hysteria sues for damages. Hysterical joints are always associated with puzzling diagnostic difficulties. There are, however, several reliable means by which they may be recognized with considerable certainty. Dr. Preston dismisses this subject with a quotation from Brodie (1837), a reference to some statistical observations by Charcot, and a statement that these symptoms are often attributed to trivial accidents.

A search through the book for information in regard to prognosis proves unavailing. No special pages are devoted to it; it is not mentioned in the index. Has not then the "general practitioner" the right to be enabled to inform his patients as to the probable outcome of their disease?

It is needless to make further specifications. Such omissions as we have mentioned are sufficient to impair materially the value of any monograph. They are defects, however, which can easily be rectified in a second edition by an author whose experience is so extensive as Dr. Preston's. We trust the opportunity for such additions will be permitted him.

A Course of Practical Histology. By EDWARD ALBERT SCHÄFER, LL. D., F. R. S., Jodrell Professor of Physiology in University College, London. Second Edition. Philadelphia: Lea Brothers & Co., 1897. Pp. xi–298. [Price, $2.25.]

THE second edition of this manual requires but little comment from the reviewer. The name of the author is the strongest recommendation it could have, for the clear, terse character of Dr. Schäfer's writings is familiar to histologists and medical men throughout the world.

The additions and changes that have been made in the present edition embody the latest advances in technics and the most recent disclosures of the microscope. The descriptions in the text are rendered clearer by a large number of good illustrations, and reference to any section is made easy by a very complete index.

Uranalysis. A Guide for the Busy Practitioner. By HEINRICH STERN, Ph. D., M. D. New York: E. R. Pelton, 1897. Pp. 9–61.

So many books are to be had for the enlightenment of the "busy practitioner" that prove in the reading only to add to his confusion that it is a pleasure to find a work like that of Dr. Stern. A methodical arrangement; a style at once so concise that no unnecessary word is used, and so clear that it can not be misunderstood; and accurate illustrations of the microscopical appearances are among the things that make the book a thoroughly practical laboratory guide.

"The purport of this little book . . . is to aid the busy practitioner in his routine work," says the preface, and this aim has been kept in view throughout the text.

In the section on chemical analysis the formula for each reagent; a clear but brief description of the steps of each test; and a short note on the value of the test are given. In the chapter on microscopical examinations a knowledge of the technics of microscopic work is presupposed. A brief description, a picture, and an outline of the pathological significance of each factor of the urinary sediment make up the section.

In view of these characteristics, we do not hesitate to predict a wide popularity for this little work, a popularity that will be increased by its neat binding, clear type, and freedom from typographical errors.

The Roller Bandage, with a Chapter on Surgical Dressing. By William Barton Hopkins, M. D., Surgeon to the Pennsylvania Hospital. With Illustrations. Fourth Edition. Philadelphia: J. B. Lippincott Company, 1897. Pp. xi–130. [Price, $1.25.]

The fourth edition of this manual contains but few changes, and of these the most important is the addition of a chapter on surgical dressing.

This chapter, while it touches on all the more important points, treats of its subject, we think, a trifle too briefly to be of as great value to the average student as the other chapters have proved to be. It adds to the completeness of the book, however, and, were it a little more comprehensive, would increase its sphere of usefulness.

Burdett's Hospitals and Charities, 1897. Being the Yearbook of Philanthropy. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities. An Exhaustive Record of Hospital Work for the Year. It will also be found to be the most Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Religious and Benevolent Institutions, Dispensaries, and Nursing and Convalescent Institutions. By Henry C. Burdett, Editor of the *Hospital,* etc. London: The Scientific Press, Limited. New York: Charles Scribner's Sons. Boston and Chicago: D. C. Heath and Company, 1897. Pp. 1019.

The remarkable fund of information which this well-known annual contains has often been alluded to in our columns, and we have spoken before in frank admiration of the great possibilities for usefulness which the work possesses. The volume at present noticed represents all the inherent virtues of its predecessors, manifested, however, necessarily by their application to recently obtained statistics and reports. No greater mistake can be made than to assume that this work is narrow or insular.

BOOKS, ETC., RECEIVED.

Exercises in Practical Physiology. By Augustus D. Waller, M. D., F. R. S., Lecturer on Physiology to St. Mary's Hospital Medical School. Part III. Physiology of the Nervous System—Electro-physiology. London, New York, and Bombay: Longmans, Green, and Co., 1897. Pp. 91.

The Psychical Correlation of Religious Emotion and Sexual Desire. By James Weir, Jr., M. D. Owensboro, Kentucky: Howard Printing Company, 1897. Pp. 32.

Suite de monographies cliniques sur les questions en médecine, en chirurgie, en biologie. No. 3. Le lavage du sang. Par le Dr. Félix Lejars, Agrégé, chirurgien des hôpitaux de Paris, etc. Paris: Masson et Cie., 1897. Pp. 42.

Die Wertbemessung des Diphtherieheilserums und deren theoretische Grundlagen. Von Professor Dr. P. Ehrlich, Geheimer Medizinalrat. Sechster Band. Jena: Gustav Fischer, 1897. Pp. 34.

Sinnesorgane. Erste Abteilung. Haut (Integumentum commune). Von weil. Professor Dr. A. von Brunn, in Rostock. Mit 117 teilweise farbigen Abbildungen im Text. Handbuch der Anatomie des Menschen. Herausgegeben von Professor Dr. Karl von Bardeleben. Fünfter Band. Erste Abteilung. Jena: Gustav Fischer, 1897. Pp. 109.

Handbuch der Therapie innerer Krankheiten, in sieben Bänden. Herausgegeben von Dr. F. Penzoldt, Professor in Erlangen, und Dr. R. Stintzing, Professor in Jena. Zweite teilweise umgearbeitete Auflage. Erste Lieferung. Mit 11 Abbildungen im Text. Jena: Gustav Fischer, 1897. Pp. 240.

Proceedings of the Nebraska State Medical Society. Twenty-ninth Annual Session, 1897.

The Johns Hopkins Hospital Reports. Volume VI. 1897.

Medical Education. By Robert Levy, M. D., of Denver. [Reprinted from the *Colorado State Medical Society Proceedings.*]

Direct Autoscopy; Kirstein. By Robert Levy, M. D. [Reprinted from the *Gross Medical College Bulletin.*]

Exaggerated Arytænoid Movement—Ankylosis of the Crico-arytænoid Articulation. By Robert Levy, M. D. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Fatal Hæmorrhage from the Nose and Pharynx from Unusual Cause, with Exhibition of Specimen. By Robert Levy, M. D. [Reprinted from the *Laryngoscope.*]

Tuberculosis of the Tonsils, Pharynx, and Larynx. By Lewis S. Somers, M. D., of Philadelphia. [Reprinted from the *Medical and Surgical Reporter.*]

Adductor Vocal Paralysis. By Lewis S. Somers, M. D. [Reprinted from the *Medical News.*]

The Influence of Diseases of the Nares and Pharynx on Aural Affections. A Study of Six Hundred Cases of Middle-ear Disease. By Lewis S. Somers, M. D. [Reprinted from the *University Medical Magazine.*]

The Increase of Insanity and Consumption among the Negro Population of the South since the War. By Thomas J. Mays, M. D., of Philadelphia. [Reprinted from the *Boston Medical and Surgical Journal.*]

Cough and its Treatment. By Thomas J. Mays, M. D. [Reprinted from the *Therapeutic Gazette.*]

Miscellany.

Medical Education and Preventive Medicine in Canada.—The following passages from Dr. Moore's presidential address, delivered at the recent annual meeting of the Canadian Medical Association, convey much interesting information as to medical matters in the Dominion:

"The objects sought to be attained by the formation of this association were: 1. To promote the science of medicine. 2. To unify the members of the medical profession in this Dominion. 3. To secure a uniform standard of medical education, both in the requirements preliminary to the study of medicine, and for the license to practise after graduation in the Dominion. That the first object of this association has been attained no one will deny. This society has contributed largely to the advancement of all branches of medical science in Canada. Our ablest medical men and some of the ablest of Great Britain as well as of the neighboring republic have attended its meetings and contributed papers of the highest order. The second object has also been attained. It has brought the members of the profession from all parts of this country together, and they have thereby learned the status and requirements of medical education in each Province. An opportunity has thus been offered for a full and free discussion, and it is gratifying to know that a common desire for uniformity in medical education inspires the profession throughout the whole Dominion. The third object, I regret to say, has not yet been reached, but I feel confident that through the efforts and influence of the members of this association it soon will be an accomplished fact.

"By the provisions of the British North America Act all matters of an educational nature were given over to the legislatures of the Provinces, they to make such laws, rules, and regulations as to them seemed proper; whether this was wise or not I am not prepared to say, but it appears to me that the question of education is of a national rather than of a provincial character, more especially medical science, as it knows no geographical confines. Soon after the formation of the legislatures, the medical profession in each Province, believing it to be in their interest as well as in the interest of the public, sought and obtained from their respective legislatures an act entitled the Medical Act, which provided for the formation and election of a medical council. By virtue of the provisions of this act the licensing power and the complete control of medical education were given to and vested in this body. This council was to be a representative body and to be re-elected once in a given number of years. Unfortunately, no concerted action took place between the members of the profession in the different Provinces before appealing to the legislatures, and the results were just what might naturally be expected, striking differences in the acts asked for and obtained. These diversities still exist, and it is these dissimilarities that offer to-day the greatest barrier to interprovincial registration.

"To my mind, there is nothing of more importance to the medical profession in Canada than uniformity in medical legislation. Now that we are nearly all of one mind, only divided upon issues which are of no vital importance, let us make an earnest appeal to our lawmakers and have the clauses not in harmony repealed. I trust that at this meeting a representative committee may be appointed to draft a medical act suitable for the whole Dominion. When this is accomplished, a copy can be placed in the hands of each Provincial Medical Council with the request that they appeal to their respective legislatures to amend their existing medical acts so as to harmonize them with the proposed one, and have them become law. Interprovincial registration will then be an easy matter and would be readily accomplished. Then we could turn our eyes eastward to the mother country and seek reciprocity with her; and, as she has always listened attentively to any reasonable request made by us, we might confidently look for the day soon to arrive when our prayer would be allowed, and any man obtaining a license in any of our Provinces would be free to practise medicine in any clime where floats the union jack.

"In consequence of the exertions and ability of our medical legislators in both the Federal and Provincial Parliaments, the public have been educated to the necessity of protecting their lives from the perils of infectious diseases of a preventable character. They have been taught the lesson that there is no boon more worth possessing than life and health. In each Province a provincial board of health has been established, and in each municipality, village, town, and city a local board of health is annually elected and a medical health officer appointed. The sanitary laws are rigidly enforced in most of the provinces. In the Province of Ontario every physician is compelled under a heavy penalty to report, within a very few hours after it has come under his charge, every case of a contagious or infectious nature to the secretary of the local board of health. The house in which the case is located is immediately placarded, and no inmate is permitted to attend any school until the physician in attendance certifies that the disease has disappeared and the house and its contents have been disinfected and are free from contagion. Serum therapy is well understood and its benefits are appreciated. Vaccination is made compulsory. The water used for domestic purposes is carefully looked after and any source which has been shown to be impure is closed up or condemned, and the public are forbidden to make further use of it. When any section of a city, town, or county is shown to be unsanitary, the provincial board of health, upon being notified, immediately proceeds to put it in a condition not dangerous to health. The milk furnished to towns and cities for domestic use is carefully inspected, the results are published several times a year, and a heavy fine is imposed when an impure article is offered for sale. The herds of milk vendors are frequently inspected and tested with tuberculin by competent men, and all tuberculous animals are promptly destroyed. Meat offered for sale is carefully watched, any of an unwholesome nature is seized, and the person exhibiting it is liable to a heavy penalty. Drainage in all the larger towns and cities is vigilantly looked after, and sanitary inspectors carefully examine all plumbing and report thereon to the board of health. The results following these precautions have been most gratifying. Diphtheria, typhoid fever, and small-pox have been almost stamped out in many localities, and scarlet fever and measles have been very much modified in their course. In view of the advances made in preventive medicine in the past two or three decades, may we not confidently hope that within a few years immunity may be secured from most infectious diseases? Preventive medicine now rests upon a sound and promising basis in Canada. Yet, while all this is true, it is to be regretted that a large number of our inhabitants love the mysterious, the occult, the unscientific, and indulge in the dangerous practice of swallowing patent nostrums, thereby injuring their health and shortening their lives. Credulity still lives in the minds of many and probably always will. Truth is stranger than fiction, and science has always traveled an uphill road.

"In the Ontario Medical Act there are certain penal clauses to be found which have enabled the medical council of that Province to prosecute, fine, and imprison charlatans and men practising medicine without a license and to erase the name of any physician from the medical register, thus depriving him of the right to practise, who has been convicted, either in her Majesty's dominions or elsewhere, of any offense which, if committed in Canada, would be a felony or misdemeanor, or been guilty of any infamous or disgraceful conduct in a professional respect. By virtue of this clause in the act we have been able in Ontario to suppress quackery and drive from the profession unscrupulous men.

"Our provincial governments have built beautiful homes for those suffering from mental diseases and provided the best-known treatment for these unfortunates. They have aided hospitals and provided domiciles for the incurable, and they keep a strict watch over all. They are alive to the fact that to have a progressive and prosperous nation they must have healthy and intelligent people.

"The standard of medical education and the requirements exacted in this country will compare favorably with those of any country in the world. We require as high a standard of preliminary education as is demanded in Great Britain, and in some instances a higher one. The examination for graduation and also for the license to practise is a severe one, and well calculated to test the knowledge of the candidate. A four-year graded course is required in most of the Provinces; in Ontario a period of five years must be spent in the study of medicine. On and after the first day of October, 1899, four sessions of eight months each, together with a fifth year spent in clinical and practical work, will be demanded. In the Maritime Provinces they favor the eight-month session, while here in McGill College they give a nine-month course. Our medical colleges are well equipped in every respect. The teaching is of the best and the practical work all that could be desired. There is plenty of material for clinical instruction, and every facility is offered to the student to gain a knowledge of the science of medicine. The opportunities for hospital work are good. We have between sixty and seventy hospitals in Canada, over forty in Ontario alone, and the medical staff in each hospital is up to date and the work done excellent. We have over a dozen well-equipped universities, a large number of collegiate institutes, high public and separate schools, well provided with teachers, appliances, and accommodation. In Ontario attendance at school is compulsory. There are few countries, if any, that can boast a better system of education."

Picric Acid.—In the *Gazette hebdomadaire de médecine et de chirurgie* for August 1st, M. Courtellemont states that he has employed picric acid in three different affections: Burns, ulcers of the leg, and simple wounds. The method of treatment was as follows: The acid was always employed in solution on wet compresses applied to the affected parts; local baths were never resorted to. The solution used was the saturated solution—that is, from twelve to thirteen parts in a thousand parts of water. The author recommends the most rigorous antisepsis during the course of this treatment, as it is an essential point. Without this precaution, pus forms, the patient suffers, the dressing can not remain on for any length of time, and cicatrization does not occur. These antiseptic precautions concern the surgeon's hands as well as the wound itself, which should be freed from whatever may cover it, such as ointment, cotton, etc., and washed with an antiseptic solution. After this is done the wet compresses are applied; they should be thoroughly saturated with the picric acid. The diseased part is covered with three compresses, one upon the other, around the leg, and this dressing extends above and below the wound; over the compresses a band of ordinary cotton batting and of tarlatan is applied. Another essential point is the absence of any impermeable covering, as picric acid should become dry in order to act, and it can not become so unless the water is allowed to evaporate from the solution.

The rule for the duration of the application of the compresses depends upon what precedes it; a wet dressing, in order to become dry, requires at least a day; then during the first day of its employment the picric acid produces very little or no effect; for this reason it is necessary to allow a long interval to pass between the applications in order to reduce the time lost to a minimum. This is also an essential point in this method of treatment, and perhaps the most important of all. A dressing of picric acid should be left in place for seven days; in any case it should remain for at least three days, unless in exceptional circumstances. The author changes the compresses at the end of three days, and, if the discharge is abundant, they are changed again at the end of three more days; afterward, the interval is increased until seven days are allowed to pass between the applications. The indication for renewing the dressing before the seventh day is not the quantity of the discharge or the odor, which is sometimes very marked in ulcers and burns, but it is the pain or the temperature. In withdrawing the dressing it is necessary to pull it in order to detach it from the wound, to which it generally adheres, and this should be done carefully in order to avoid provoking pain. Care must be taken, also, to preserve the circular crust which surrounds the wound after several applications of the dressing, as this is the ring of keratinization; exception should be made in cases in which this crust scarcely adheres, or else in which it is too thick or extended, for it then forms a foreign body which had better be removed.

Concerning this treatment in burns, the author states that it has given the best results in M. Thiery's hands, and he himself has employed it in several cases of burns with very good results; two facts with which he was particularly struck were the absence of pain and the rapidity of desiccation. The former was constant; the patient never suffered; from the first day the dressings were applied the patients, who had suffered greatly before, observed the suppression of the pain, and it did not return again. In one case the patient presented burns of the second degree on the back, the head, and the arms. During the first few days the temperature ranged from 102.1° to 104° F., although auscultation revealed no pulmonary lesion; there was a very profuse serous discharge from the wounds, but in spite of this there was no suffering. The rapidity of cicatrization was also worthy of notice; in superficial burns it was observed that each application diminished the extent of the wound.

Struck with the favorable results obtained in the treatment of burns, the author determined to make use of picric acid in ulcers of the leg, and in a case of varicose ulcer he employed this treatment according to the method above described. The results were so favorable that he felt encouraged to try the treatment in other cases of the same nature, and in all the results were equally distinct and satisfactory. He concludes, therefore, that for ulcers of the leg, as well as for burns, picric acid is remarkable for the suppression of pain and the rapidity of cicatrization caused by it. Not only is it painless in itself, but it possesses an analgetic action, and the moment it is applied to a wound the pain ceases and does not return.

Generally in ulcers of the leg pain is not a very marked symptom, the principal symptom being the loss of substance, the ulceration, and on this condition picric acid exerts a rapid and powerfully curative action. After the first application the ulcer changes completely in appearance; it becomes clean and diminished in size, and at the bottom it becomes red and covered with active granulations. After the second application it will be seen that the ulcer is almost cured, and, in the majority of cases, complete recovery takes place under the third dressing.

Regarding deep ulcers, M. Courtellemont gives a detailed account of a case in which the results obtained were most favorable. During the first month of the treatment the acid gave admirable results; cicatrization progressed very rapidly, even astonishingly, and recovery was almost obtained when the cicatricial process ceased. This was due, the author thinks, to the fact that the action of the acid was no longer felt, as the wound, or perhaps the organism, had become saturated with it, and it was necessary to suspend the treatment for some time in order to obtain fresh success. Several cases seemed to confirm this. When recovery takes a long time, when progress is no longer visible at each application it is well, he says, to suspend the employment of the acid for a time, and after the treatment is resumed it will be found that the cicatricial process has gained new vigor.

If, in this case, the author continues, the definitive results somewhat disappointed the hopes that had been raised by the rapid amelioration obtained in the beginning of the treatment, it must not be attributed to the picric acid, for the patient had a peculiarly grave and rebellious ulcer, and his recovery should be considered a great success. In all ulcers of the leg, whether superficial or deep, with hard borders, picric acid gives excellent results. On account of its analgetic and keratinic action and its simplicity of application, M. Courtellemont thinks it should rank with the best remedies and its use classed among the preferred procedures for this affection.

In the treatment of simple wounds M. Courtellemont has had occasion several times to employ this method, and cicatrization was always obtained in a very short time, more rapidly even than in cases of burns and ulcers.

Concerning the inconveniences of this treatment, the author states that during the first hour following the application of the compresses the patient feels a slight pricking and burning sensation; also that on the seventh day a rather intense itching is felt near the wound, which is like the pruritus that marks all rapid cicatrization. These symptoms, however, are never really distressing, and are seldom complained of by the patients unless they are questioned by the physician.

Besides this, certain accidents have been noted, although rarely; that is, a yellow coloration of the skin and of the sclerotics and generalized or localized erythema. M. Courtellemont states that he has not observed them himself, but that M. Thiery had observed the occurrence of erythema in a patient who had been treated with powdered picric acid; also that M. Cottet had seen two cases of localized erythema following the application of picric-acid compresses. Both the patients, however, recovered very rapidly.

Another and very disagreeable inconvenience for the physician is the yellow stain which remains on the hands after its employment. This, however, may be lessened by repeated and energetic brushing with soap and water after applying the compresses. A slight yellow stain will remain for a day and then disappear, although around the nails it persists for several days. Any stains on the clothing are easily removed by boiling. This, M. Courtellemont thinks, is the only real drawback, and it is not of sufficient importance to prevent the further employment of this treatment.

Intermittent Hemiplegia.—In the July number of the *Liverpool Medico-chirurgical Journal* there is a report of a recent meeting of the Liverpool Medical Institution at which Dr. A. Davidson related the following case: The patient was admitted into the hospital on January 18, 1897, suffering from left hemiplegia. He was a watchman, seventy-three years old, and had always enjoyed good health. On January 18th, after arranging his lamps, he sat down in his sentry-box before the fire, and on trying to get up again he found himself unable to do so. Two men tried to raise him, but he was unable to stand alone; there was no loss of consciousness at any time. He was brought to the hospital and his left side was found to be completely paralyzed. The pupils were equal, and reacted to light; the upper part of the face was partially weakened on the left side; at the lower part, the mouth was drawn to the right side; the articulation was imperfect and mumbling, and the tongue was protruded slightly to the left side. The left arm and leg were totally paralyzed. Sensation seemed everywhere normal. The pulse was 76 and regular. Two hours after his admission the patient had regained complete power in his face and limbs, and passed urine without trouble. He seemed somewhat excited, but otherwise was quite well. During the night he had four or five hemiplegic attacks, each lasting from about fifteen to thirty minutes, without loss of consciousness.

On the morning of the 19th he was free from any sign of paralysis of the face, arm, or leg. Regarding his general condition, he was a hale-looking old man. The tongue was coated, the teeth were very defective, the appetite was good; the pulse was 76 and regular, the arteries were thickened and tortuous, and the heart sounds were normal; the lungs were emphysematous, there was slight cough with expectoration, and the urine was normal. At 12.30 P. M. he was again found to have complete paralysis of the face, arm, and leg of the left side. About 1.15 P. M. Dr. Davidson saw him for the first time. He had paralysis of the left side. He could wrinkle the brow on either side, and close both eyelids together, but he could not close the left eyelid without the right. The left side of the mouth was immobile. Articulation was only slightly affected. The left arm was quite powerless. In the left leg there was only a very slight ability to move the hip and knee. Sensation was normal. While he was still under examination (1.45 P. M.), he drew the author's attention to the gradual return of power in his left hand, and presently the paralysis entirely disappeared. He could now close the left eye independently, as well as the right. He was ordered to have a dose of calomel, and eight grains of bromide of potassium three times a day. During the next twenty-four hours several alternations of paralysis and recovery took place, but the remissions by degrees became shorter and slighter. On the night of January 20th the hemiplegia became almost permanent, and remained so until his removal from the hospital by his friends on the 28th. Dr. Davidson states that he has seen the patient twice since at his own home, the last time in the beginning of June. He remains in good general health and spirits. The pulse is 72 and regular. The arm is completely paralyzed, he can just move the finger, and there is no rigidity or any pain except in the shoulder (rheumatic); the leg and face are rather better. He can lift the leg off the bed; there is some tenderness in the thigh. The tongue is protruded straight. The bladder is normal.

Dr. Davidson says this case is unique so far as he knows, and his explanation is that a thrombus in the atheromatous cerebral artery became partially detached and flapped to and fro in the current of blood, occasionally blocking the artery, but occasionally leaving the current free. Or if it was entirely detached, and arrested at the next bifurcation of the artery, he says, it might there sway to and fro like a ball valve until by continued growth it became fixed and a permanent block of the vessel resulted.

Brewer's Yeast in the Treatment of Diabetes Mellitus.—According to M. Beylot, in the *Revue des sciences médicales* for July 15th (*Lyon médical*, August 1st), hydrochloric acid favors fermentation; sodium bicarbonate has no action. Fermentation occurs in the presence of gastric juice obtained from fistulæ. The yeast acts almost as well on the sugars produced by diastasis at the expense of the hydrocarbonates as on the manufactured glucose.

By attacking the sugar thus formed, in the dog, the alimentary glycosuria was diminished in a notable manner. The saccharomyces became accumulated in the intestine and continued to act for several days after the ingestion of the yeast.

Diabetics, under the influence of the yeast, in doses of from one to three teaspoonfuls, increased in weight and regained their strength, and the sugar generally diminished. The yeast, however, acts only on the sugar produced by alimentation; it can not act on the sugar which is produced in patients at the expense of their tissues. Yeast is not an article of medical treatment for diabetes; it is an indirect means of applying Bouchardat's diet without depriving the patients of the useful principles which accompany the hydrocarbonates in proscribed foods; it has, furthermore, eupeptic properties.

Œdema of the Limbs in Exophthalmic Goitre, and its Treatment.—In the *Journal des praticiens* for August 7th there is an article on this subject by M. Liégeois in which he remarks that, definitively, there are but four varieties of œdema of the limbs in thyreo-exophthalmic neurosis: Œdema of cardiac origin, dyscratic œdema, œdema coincident with albuminuria (this being independent of the well-known parenchymatous or glomerular lesions of the kidneys), and œdema of vasomotor origin.

That œdema of cardiac origin may be paroxysmal is demonstrated by a case which is described in detail by the author. In well-established cases, he says, of œdema of the legs by asystole, when the impulse of the overtaxed heart is suddenly weakened and the tension of the radial pulse is suddenly lowered, digitalis excels; it is still more excellent when the œdema follows definitive organic alterations of the muscle, of the cardiac valves, and of the aorta; apart from that, it should be banished from the treatment of exophthalmic goître, because, instead of slackening the heart, it increases the impulse, the energy of the beats, and provokes in the entire arterial system other than that of the carotid, which is in active dilatation, a condition of constriction which, if not absolutely dangerous, is, at least, entirely unnecessary.

By dyscratic œdema of the limbs in exophthalmic goître the author means that which is coincident in many cases of the disease with chlorosis, either at the period of puberty or at the change of life, or with anæmia engendered by chronic metritis, with leucorrhœa, amenorrhœa, or dysmenorrhœa, or following pregnancy, nursing, or puerperal hæmorrhages; in the two sexes, following sexual abuse, diarrhœa, or protracted illnesses, such as typhoid and malarial fevers, or privations. According to the author, in the form of exophthalmic goître due to these causes, in which the pulse does not usually exceed 100 or 110, and the pulsatile goître and the protrusion of the eyes are but moderately developed, in which the neurosis occurs with symptoms of torpor, soft œdema of the feet and of the lower part of the legs is common after walking and riding, or it becomes established for several weeks in the legs without the presence of albumin in the urine or dilatation of the heart. Regarding the treatment, infusions of pure bitters, milk, rare meats, and raw meat should be recommended at first. If this is not sufficient, arsenic should be resorted to. Iron is not to be advised unless the arsenic fails; it is not harmful, but will be found useful in the chloro-anæmic torpid variety, provided ferrous protochloride or iron and potassium tartrate is exclusively used; they have the advantage of not exciting the heart.

Œdema of the limbs is not observed whenever chemical analysis reveals the presence of albumin in the urine in exophthalmic goître. It never exists when albumin, not very abundant, however, is not observed except during the digestive period. Œdema does not show itself either in subjects who pass not only albumin, but sugar, following an emotion, after a feeling of anger, or after a paroxysm of cardio-arterial palpitation. Whenever the author has observed œdema of the limbs in patients with exophthalmic goître who excreted albuminous urine apart from the digestive periods, they had a cachectic appearance; the latter were emaciated, and the skin had a pale waxy tint, indicating probably a lesion of the blood; the former had very bad gastric and intestinal digestion. None of them had parenchymatous nephritis or venous thrombosis of the limbs. Have not the following, asks the author, been frequently invoked as the proximate causes of albuminuria: In cachectics there is an elimination by the kidneys of the albuminoid products of the blood which have undergone a chemical molecular alteration; in dyspeptics there is the elimination by the same tract of toxic albuminoid matters which have been absorbed before having undergone a complete digestive elaboration, and are susceptible of creating an identical alteration of the blood. In a word, the œdema is dyscratic, but amenable to treatment; in some cases tonics, particularly arsenic, in others, antidyspeptics, are to be employed.

M. Liégcois states that œdema is rarely of a purely vasomotor origin. He has not met with it himself, but he cites a case which came under Cuffer's observation in 1878. The patient, a woman thirty years old, had presented a pronounced swelling of the thyreoid body thirteen years before, which had entirely disappeared under the influence of an iodine ointment. Three months before her entrance into the hospital she noticed that her feet, notably the left foot, were swollen, especially at night. During the following months her hands were attacked in the same manner; there were acute itching, intense heat, and a very pronounced throbbing sensation in the whole palmar region.

At the same time a persistent cephalalgia appeared, which was more acute on the left side; the left eye easily became red and full of tears, and the eyelid became tumefied. Frequently there were flashes of heat, accompanied by profuse perspiration of the entire left side; the meningitic streak showed itself very rapidly on this side, and a papular and erythematous eruption was established in the left dorsal region.

In the absence of albumin in the urine and of the *bruit de galop*, Peter diagnosticated the case as one of Basedow's disease without either goître or exophthalmia, with palpitation and vasomotor troubles predominating in the left side (considering as such the serous suffusions of the limbs). In this case hydrotherapy and galvanization alternated with faradization constituted the principal treatment.

Arecoline as a Tæniacide.—This drug, says a writer in the *Journal de médecine de Paris* for August 1st, is one of the alkaloids found in the areca nut, and its physiological action is manifest on the contractions of the intestine; as a tæniacide, its action is comparable to that of pelletierine. M. Ricapet observed, as a physiological action of the product which he terms arecoline hydrochloride, that immediately after the injection there was a considerable increase of the amplitude without diminution in the frequency of the cardiac pulsations, which condition persisted for several hours.

According to M. Ricapet, toxic doses produce the arrest of the heart about two hours after the injection, and this arrest takes place in diastole and has a certain analogy to that obtained by Prévost in his remarkable studies with muscarine. The auricles and the ventricles are relaxed and distended by the blood; there is, however, this difference, that the heart arrested by muscarine remains excitable, whereas when arecoline hydrochloride is used this is not the case.

Although, says the writer, this drug is little used in therapeutics, it is worthy of a better place than it now occupies. It will be found very useful in obstinate constipation, because of its action on the contractility of the intestine; in certain cases of intestinal occlusion, at least, in the beginning; finally, in all cases in which it is necessary to stimulate the sluggish or paralyzed intestine, either following a local condition or secondary to a general condition. As a vermifuge or tæniafuge it may also be used with good results; as its activity is very great, however, it must be employed cautiously and the initial dose of 0.015 of a grain must not be exceeded unless it is necessary and the drug is well borne.

Arecoline possesses still another property. According to Frohner, says the writer, arecoline is a sialagogue of the first rank, which not only is comparable to pilocarpine, but even exceeds it. Salivation occurs in about five minutes after its injection and attains its maximum in about half an hour. Arecoline, according to the same author, is also a laxative equal to eserine. Acting like a combination of eserine and pilocarpine, it is worthy, he says, of being tried in all diseases in which it is desired to obtain evacuation of the intestine with liquefaction of its contents.

M. Martin employed this drug as a tæniafuge, using sixty grains of the powdered areca nut to obtain the desired result, and he observed the absence of colic during the moment of expulsion. The advantages of arecoline over pelletierine are that it costs less, the active dose is not toxic, it does not cause colic, and it is not necessary to follow its employment with a purgative. If arecoline is to be employed for its action on the organism itself, it may be administered hypodermically or by the mouth.

If it is a question of parasites in the intestine, arecoline should be administered only by the mouth, and in such a form as to prevent its absorption until it reaches the intestine—that is, in pills coated with keratin or gelatin. The writer recommends doses of 0.007 of a grain, repeated several times, according to the age of the subject and the tolerance shown, until the desired result is obtained.

The Idiopathic Suppurative Peritonitis of Adolescents.—In the *Journal des sciences médicales de Lille* for July 31st, M. Verstraete reports a clinical lecture by M. Duret, who refers to a case which came under the observation of M. Béra in which the patient was subjected to two operations. The first consisted in the opening, lavage, and drainage of a large purulent sac which adhered to the abdominal wall, but had formed in the peritonæum; the second operation had been rendered necessary by a fæcal fistula which had not manifested itself until afterward. A full account of this case is published in another part of the same journal.

The varieties of purulent collections, says the author, are numerous and yet very little known. There is at first a certain number of abscesses of the abdominal wall which are symptomatic of a deeper affection; they are the appendicular suppurations and those which have for their origin the liver and the biliary vesicle; frequently also in the iliac region abscesses of ganglionic origin are observed.

Regarding certain collections which present more exceptional peculiarities and characteristics, in the first group of pathological facts may be placed the circumumbilical abscesses. They are rather frequently the result of suppurative lymphangeitis due to lack of cleanliness in the umbilical cicatrix. The secretions and greasy matters are accumulated in the umbilical cavity, erythema appears, and inflammation follows its different periods. The umbilical wound in a newborn child is occasionally also the starting point of an infection which, although remaining localized, is, however, grave at this stage of life. In the adult, umbilical abscesses are not rare, but they are not of such importance.

The second group includes the phlegmons and abscesses of the sheath of the rectus muscle. They will often be found, says the author, as manifestations of Eberth's or the typhoid suppuration. Simple contusion and bloody effusion are rarer causes of abscesses of the rectus muscle. These collections are specially characterized by being unilateral; more frequently they represent the muscle in the sheath in which they are contained; like it also they extend downward.

In the third group are found hypogastric phlegmons and abscesses which are developed in Retzius's cavity. The seat of the abscess is between the layers of the fascia transversalis. More frequently an infection of the deep genito-urinary organs follows, for instance, in the ureters, the prostate, and the bladder. Subpubic puncture of the bladder has sometimes been followed by abscesses.

Heurteaux's phlegmons, the author continues, form the fourth group. They are developed in a peculiar anatomical region which has been described by surgeons, but on the subject of which they are not unanimous. The principal characters of this inflammation or the abscess which follows it are as follows: It is subumbilical; its upper limit is marked by the umbilicus, and its lower limit is midway between the umbilicus and the pubes. It is situated between the infraumbilical fascia and the peritonæum itself behind the rectus muscle. This affection, also called Heurteaux's tumor, has been observed in young subjects, especially in soldiers. It is caused by cold or by the sword-belt. The abdomen becomes painful, constipation occurs, then, after several days, diarrhœa and vomiting set in, and the patient's face is like that of a person with peritonitis. At the same time a tumefaction appears, causing the abdominal wall to bulge. The tumor is median, ellipsoid, with its long axis transverse, is arrested at a certain distance from the pubes, and does not go beyond the umbilicus. On percussion, dullness surrounded by an intestinal tympanic zone is observed. Heurteaux's phlegmon increases until suppuration becomes evident; the collection swells the umbilicus, the skin becomes red, and a spontaneous opening occurs from the eighth to the fifteenth day. There then remains a large suppurating cavity.

The fifth and last group of the suppurating collections of the abdominal wall includes what is called the suppurating circumscribed peritonitis of children or of adolescents. This singular affection, says M. Verstraete, which was described by Ferréol and Gauderon in 1876 and by Duparque in 1827, is developed in children eight, ten, and twelve years of age, and two thirds of the cases are in young girls. The symptoms are as follows: The child complains of suffering in the abdomen; it refuses to eat, the face is drawn, and the general condition is not very satisfactory. After several days these symptoms become marked; a very sharp pain is felt in the abdomen, in the median region, the lack of appetite and the nausea of the onset give place to vomiting, and the facies becomes distinctly peritoneal. The pulse is rapid, and the temperature presents great changes. On palpation, the abdomen is found to be hard and clammy, and the pain is exquisite, especially near the median line.

The general condition becomes more and more grave; agitation occurs, and delirium with or without convulsions or complete prostration is observed. Meningitis may be suspected. Sometimes the child dies before the eighth day; this termination, however, is rare. Generalization of the peritonitis and septicæmia are also rare. Ordinarily the tumefaction and the fluctuation become more and more pronounced, the umbilicus becomes prominent, and the collection opens externally. Flakes of pus, very thick and sometimes fœtid, are discharged for some time, and then recovery occurs rather rapidly. In other instances the suppuration does not dry up and the child dies of exhaustion.

Regarding the different causes of circumscribed peritonitis, according to the author, there exist forms which are due to inflammation of neighboring viscera. The type is the iliac abscess following inflammation of the vermiform appendix; iliac, says M. Duret, in the large majority of cases, but not always, for it is not in the region of the abdomen where the appendix has been found in ectopia. Cases of umbilical appendicular abscess are also comparatively frequent.

Other viscera than the appendix may be the origin of encysted abscesses of the peritonæum, such as the liver, the stomach, and especially the uterine annexa; intestinal perforation of any nature whatever, foreign bodies, or any kind of ulceration may be the cause. In all these cases there is a lesion of the subjacent viscera which is a cause of the suppuration. The author thinks it is not then a question of the true idiopathic peritonitis of Ferréol and of Gauderon. In this singular form of peritonitis, he says, when the termination is fatal, nothing is found at the autopsy which explains it. Gresolle, in a similar case, suspected perforation of the appendix, but the autopsy threw no light on the origin of the purulent peritonitis which had been observed. Sometimes only false membranes without any trace of pus are found.

In certain observations, M. Verstraete continues, cold may be a factor; it may be, for example, that a child, while in a profuse perspiration, has been allowed to sleep in a damp place or on the ground, etc.; it is difficult to judge of the value of this ætiology. In children, it is true, the serous membranes have a great tendency to suppurate; this suppuration, also, yields easily to surgical intervention, or even spontaneously. A cause apparently so insignificant as cold is perhaps sufficient.

Amylaceous Dyspepsia.—In an article on this subject in the *Lancet* for August 7th Mr. James Taylor remarks that in order to understand what the derangement termed amylaceous dyspepsia is, it is necessary to know what occurs during the normal digestion of amylaceous substances. According to Dr. Christopher, he says, who prefers the term superdigestion to indigestion, the normal digestive processes are due to fermentations brought about by the unorganized ferments of the alimentary canal. Pathological fermentations are induced by organized ferments and micro-organisms, which exert their peculiar action on the products of normal fermentation. That is, he defines superdigestion as the result of pathological fermentations of the products of normal digestion. In salivary digestion the starchy portions of the food are transformed into maltose and dextrin.

This transformation, says the author, takes place best in a neutral medium. Until recently it was supposed that the action of the ptyalin of the saliva was stopped immediately the food entered the stomach, owing to the hydrochloric acid being formed in sufficient quantity at the commencement of gastric digestion to neutralize the alkaline saliva. Velden has, however, shown that there is no free acid in the stomach before the expiration of from three quarters of an hour to two hours after the arrival of food in that organ. During the earlier stages of digestion it is almost certain that the hydrochloric acid secreted combines at once with the proteids, and that no free hydrochloric acid appears in the gastric secretion until the proteids have combined with as much hydrochloric acid as they require. It is supposed, therefore, he continues, that during this interval the ptyalin is permitted to maintain its action. This hypothesis was confirmed by the observations of Chittenden and Ely, which showed also that saliva neutralized with acid was more active than ordinary alkaline saliva. A portion of the acid secreted by the stomach in the early stage of gastric digestion is thus presumably used in the neutralization of saliva, and is, in consequence of this action, an aid to ptyalin, which is, *per se*, an active ferment. The resulting products of starchy proteolysis begun in the mouth and carried on in the stomach are therefore the same as those resulting from the action of saliva alone—namely, maltose and dextrin—the action being merely increased. Ultimately the greater part of the dextrin is changed into maltose. No grape sugar is formed. Therefore, in cases of excessive acidity we must look for some other source of the lactic acid, and in order to do this we must consider the action on the cane and grape sugars taken as food. Cane sugar becomes converted into invert sugar (a mixture of lævulose, or fruit sugar, and dextrose, or grape sugar), and grape sugar lends itself readily to the process of lactic-acid fermentation. This accounts for the fact that intolerance is shown by many dyspeptics to saccharine substances.

Under pathological conditions, the author goes on to say, the grape sugar resulting from the digestive processes in the intestine yields lactic and butyric acids. Or the grape sugar may undergo the alcoholic fermentation, and the resulting alcohol may in its turn undergo the acetous fermentation, forming acetic acid. This superdigestion is brought about under the influence of fermentative organisms, which are more constant in the intestine than in the stomach. Superdigestion of carbohydrates occurs, as already stated, in those disordered conditions in which excessive fermentative processes are occurring. The clinical features present in these cases are: Pain of a sickening, weakening character, coming on about three or four hours after food, referable to the abdomen, but not as a rule localized. Relief is usually experienced on taking food. There are paroxysms of marked severity at night, loss of weight, abdominal distention and tympanites, furred tongue, and constipation.

With regard to the treatment of those cases, the author continues, in which excessive fermentations of the products of starchy proteolysis are occurring in the small intestine, it is obvious that to eliminate carbohydrates from the food and to strictly limit the diet of the patient to purely albuminous substances for about a fortnight would bring relief. In doing so, however, the importance of starch as an article of diet is overlooked. In addition, such albuminous diet is irksome and monotonous, and the patient loses weight. On the whole, it would be better to lessen the quantity of amylaceous substances than to forbid the use of them altogether. Intestinal antiseptics given with the idea of destroying the micro-organisms concerned or by lessening their power to produce fermentative changes have been found useless in my hands. The principal seat of trouble being in the intestine, and the use of antiseptics being attended with no advantage, some method of digesting amylaceous substances in the stomach should be sought for, so that they may be absorbed by that organ and little or none reach the intestine, and this, says the author, can only be carried out effectually by means of a powerful diastatic ferment. The proper choice of a diastase is important. Many malt extracts contain much saccharine matter. This is mostly in the form of grape sugar, which, when eaten in large quantities, tends to undergo fermentation in the stomach, even when the secretion of hydrochloric acid is normal and begins in the usual course. Moreover, the normal processes of digestion are naturally slow, in order that the products of the digested food may present themselves slowly for absorption and so become available only as they are required for the support of the slow nutritive processes. If a quantity of predigested food is ingested there arises the risk that it will be rapidly absorbed into the blood and be rapidly excreted without having imparted any of its nutritive qualities to the tissues. In addition, too rapid absorption into the blood not only disturbs the equilibrium of that fluid, but also produces disturbance in the liver functions. This, he thinks, explains the reason of the biliousness produced in some individuals by the use of malt extracts. Naturally, starch is eaten in preference to grape sugar, the starch being slowly converted into sugar in quantities with which the healthy organs can deal.

The author states that none of these objections hold good in the case of the preparation called taka diastase, and, that of all the preparations employed by him in amylaceous dyspepsia, none gives such good results. Its action, he says, is at once prompt and efficacious.

The dose is two grains and a half in tablet or powder, to be given at the beginning of a meal. It would be useless, he continues, to speak favorably of the action of any artificial digestive ferment without at the same time emphasizing the necessity for proper dieting. In these cases of amylaceous dyspepsia the starchy elements of the food should be properly cooked. Diastase can not act on the starch granule unless the cellulose investment has been ruptured by the process of cooking, during which process the starch, under the influence of heat and moisture, swells up into a jellylike mass. Without this previous change starch is but slowly acted on by diastase. Proper mastication of the food is essential, so that the juices of the mouth may be thoroughly incorporated with the starchy elements of the food and salivary digestion be well begun before the food enters the stomach. Excessive use of saccharine substances should be avoided, for not only are they likely to undergo lactic-acid fermentation, but they hamper the action of the ptyalin. The patient should be warned against the custom of taking quantities of fluid with the meal, on account of the tendency then present to wash the food quickly down instead of masticating it properly and mixing it thoroughly with the saliva. Fluids used at meal times should, therefore, not be sipped with the meal, the rule being to eat first and drink afterward. Tea has an inhibitory effect on salivary digestion owing to the presence of tannic acid in the leaf. It should be made weak and used sparingly, and should, like other fluids, be taken after meals. A small quantity of bicarbonate of sodium added to the tea in the teapot is said to neutralize the effect of the tannic acid. Mr. Taylor remarks that in no case did he find taka diastase fail in giving good results in amylaceous dyspepsia, and many of these results were obtained after a fair trial had been given to many diastatic and other preparations.

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THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.

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(*Continued from vol. lxv, page 868.*)

III.

THE NEURONE AS A MORPHOLOGICAL UNIT (*continued*).

Internal morphology of neurones — Investigations of Remak, Max Schultze, and others—Doctrine of a fibrillary structure—Studies of Flemming and Dogiel—Method of Nissl—Stainable and unstainable substances of Nissl—Investigations of von Lenhossék—Classifications of neurones based upon Nissl's staining method—Somatochrome, cytochrome, and caryochrome nerve cells—Arcyochrome, stichochrome, arcyostichochrome and gryochrome nerve cells—Objections to Nissl's classification—Pycnomorphous, apycnomorphous, and parapycnomorphous conditions—Chromophile cells—Nature of the "stainable substance" of Nissl—Views of Nissl, Benda, Rosin, and Held—Held's modification of Nissl's method and the results yielded by it—The influence of chemical reagents and of digestive fluids upon the Nissl bodies—Nature of the "unstainable substance" of Nissl—Acidophile reaction of Rosin—Comparison with sarcoplasm (Benda)—Fibrils in the "unstainable substance"—Becker's findings in ventral horn cells—Held's observations with erythrosin staining—The structure of axones — Conflicting views regarding cell organization in general—Summary of the existing state of knowledge concerning the internal structure of neurones.

SUFFICIENT has been said to make apparent the extraordinary significance of the methods of Golgi and of Ehrlich for the investigation of the nerve structures. Certain it is, that with regard to the external form of the neurones, the interrelations of these cells and their processes, the origin of peripheral nerve fibres from cells in the nerve centres, and the establishment of the existence of channels accessory to the main conduction by means of collaterals, these methods have led to clearer and more definite knowledge than any others hitherto employed.

But a knowledge of the external form and connections of nerve cells is by itself necessarily insufficient, and if we are ever to gain any adequate idea of the relation of the morphology of nerve cells to their complex functions, the methods described must be helped out by others which enable us to penetrate into the interior of the individual neurones, and to become acquainted with the structure of the protoplasm of which they are made up. Here we enter one of the most obscure domains in the whole of histology. We stand before the cells and their ultimate structure in the position occupied by histologists a century ago, as regards the individual organs and tissues. The desirability of becoming conversant with the morphological relations existing inside the nerve cells becomes all the more obvious when one thinks of the possibility of ultimately being able to trace a direct bearing of these upon function. When we remember not only the functions which the nerve cell possesses in common with all cells, but also the remarkable capacity it exhibits for responding to external irritation, and apparently for recording and reproducing the happenings which go on within it, a process which in groups of neurones we recognize in what we call habit and memory, the full significance of such a possibility becomes evident.

Let us turn for a few moments to a consideration of the studies which have already been made with the object of gaining an insight into the internal structure of nerve cells. About half a century ago, Remak * called attention to a fibrillary structure inside the axis cylinder and cell body of certain of the nerve cells; this was afterward further studied by Wolter and Leydig in invertebrates, and by Beale, Frommann, Deiters, Kölliker, and others in vertebrate tissues, but, it must be confessed, with no very complete agreement among the various investigators. The most notable of the earlier researches are those of Max Schultze.† This observer studied nerve cells and nerve fibres from different parts of the central nervous system of different animals, and has given us an elaborate description of his findings, which, by the way, have done much to influence the articles in the textbooks ever since. The fibrillary nature of the axis-cylinder process had before been described, but Max Schultze asserted that portions of the whole cell body were fibrillary, and further, that the fibrils are to be found within all the processes of nerve cells and not simply in the axis cylinder. The differences in appearance, he thought, depended upon the amount of interfibrillar granular substance present. This substance was scanty in the axis-cylinder processes, while in portions of the cell body and in the protoplasmic processes it was often abundant. An idea of Max Schultze's conception can be gained from a study of the illustration of the large nerve cell from the brain of the torpedo taken from his article. Schultze asserted that the fibrils which he described can easily be made out in fresh cells prepared in serum without any staining or fixing reagent, although they were best demonstrated by bichromate solutions. He further adds that the nucleus lies imbedded in the finely granular fibrillated material of the central part of the cell, but does not appear to stand in any direct connection with the distinct fibrils covering the external surface. It was also his idea that the fibrils which compose the axis cylinder result from the collection into a group of the fibrils from the arborescent processes of the cell; that is to say, that the fibrils which are seen traversing the substance of the ganglion cell do not originate in the cell, but only undergo a kind of

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* Remak, R. Neurologische Erläuterungen. *Muller's Archiv*, 1844, S. 463.

† Stricker's *Manual of Histology*, American edition, p. 134 *et seq.*

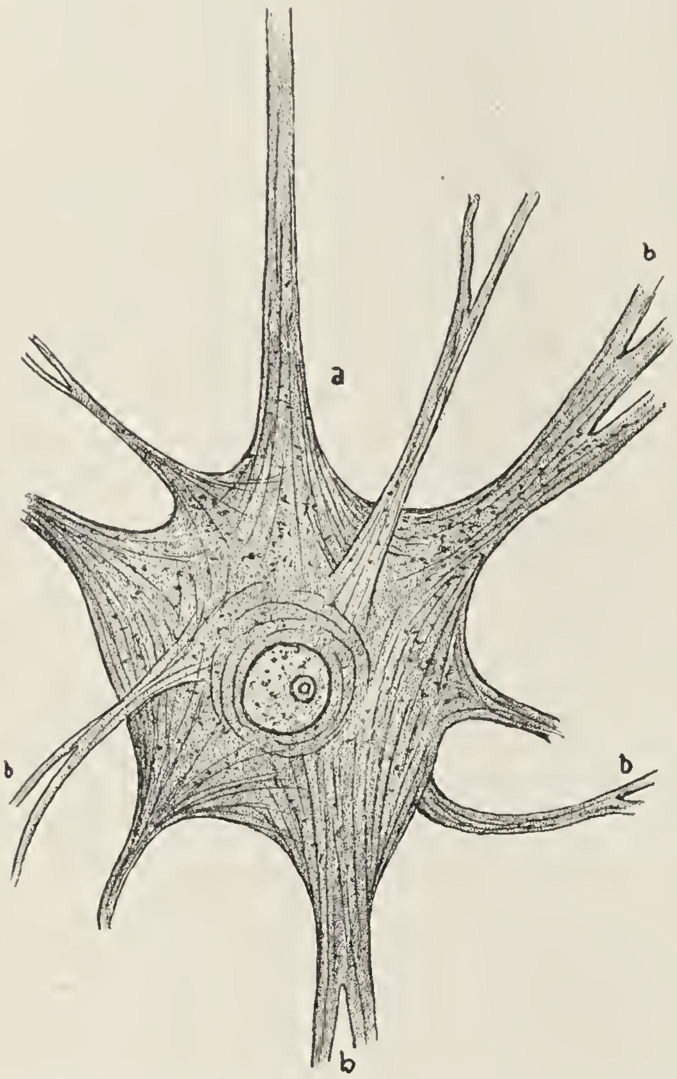

FIG. 44.—Ganglion cell from the electric lobe of the brain of the torpedo as pictured by Max Schultze. *a*, axis-cylinder process; *b*, protoplasmic processes.

arrangement in it, and then pass to the axis-cylinder process or extend into the other branched processes.[*] In view of what we know now of the structure of nerve cells, and of what can be made out with the methods he employed, it is almost inconceivable that Max Schultze could have seen nerve cells as they appear in his figures (Fig. 44). That his view, however, is surprisingly near that held as the result of some of the most recent researches can not be denied. The study of the bibliography since his time is rendered difficult by the fact that different observers have used different terms to indicate the same thing—in fact, nowhere in histology, perhaps, has there been more confusion than in dealing with the granules and fibrils within nerve cells.

The doctrine of the fibrillary structure of the nerve cell was supported strongly by Boll, Schwalbe, and Ranvier. This view soon met with opponents, however, among whom Arndt and Key and Retzius were, before Nissl's publications, the most important. The former, in 1874,[†] describing the structure of the spinal ganglion cells, spoke of the presence in them of different kinds of "elementary spherules," which varied in size and in general appearance. Key and Retzius[‡] declared that the ground substance of the spinal ganglion cell was homogeneous, but that in it numerous strongly refractive round or oval granules were present; and they thought that the appearance of a concentric striation or fibrillation could be simulated through the arrangement of these granules in rows. Flemming, in 1882,[*] saw granules within the cells which would stain with nuclear dyes, azo dyes, and hæmatoxylin, but nevertheless affirmed a fibrillary structure of the central cells, and of a tortuous or much curved threadwork within the spinal ganglion cells between the granules. He did not believe, however, that in the spinal ganglion cells there were long connected fibrils, such as the earlier observers had described, but thought that the cell body was in the main constituted of numerous, evenly distributed, very short threads, which showed sometimes finer or coarser thickenings upon them, observations which were supported subsequently by E. Müller.[†] Flemming has recently published another article[‡] in which he warmly supports the doctrine that fibrils exist inside the nerve-cell protoplasm. In Fig. 45, taken from his article, the fibrils are pictured. Kronthal and Dogiel have also expressed themselves in favor of the view of a fibrillary structure for certain at least of the nerve cells.

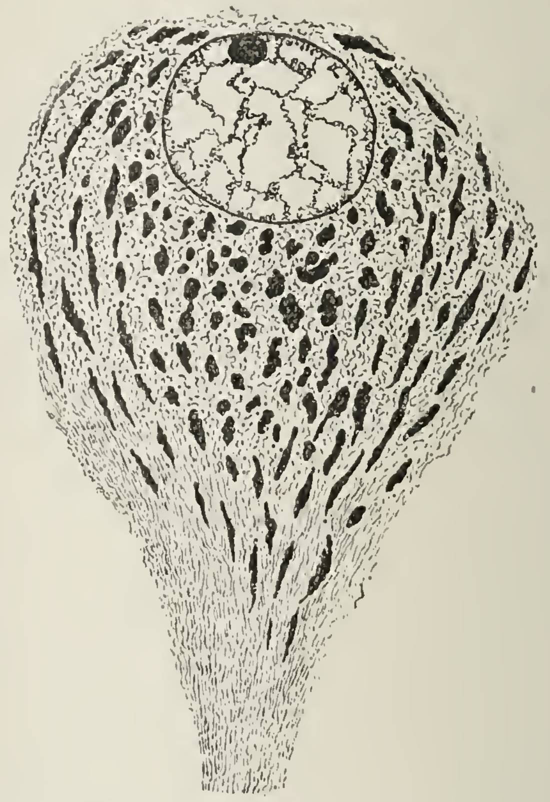

FIG. 45.—Nerve cell from the region of the ventral column of gray matter of the spinal cord of *Gadus*. Sublimate fixation; hæmatoxylin staining (After Flemming.) The axone is seen coming off from the lower end of the cell. In the axone and at its origin in the cell body a fibrillary appearance is seen. In the interior of the cell body the spindle-shaped granular masses are deeply stained, while between them are Flemming's fibrils, cut generally obliquely or transversely.

Since 1885 there has been in certain quarters a lively reaction against this view, Nissl, of Frankfort (now of Heidelberg), and von Lenhossék, of Würzburg, representing its most vigorous opponents. In that year Nissl published the first of a series of articles [*] in which he laid stress upon the appearances to be made out in tissues hardened in alcohol and stained in basic anilines, such as magenta red and methylene blue. Although the structures described by Nissl had been observed earlier by Flemming and by Benda, it was through the introduction of Nissl's methods, which bring them especially well into view, that their arrangement in the protoplasm and their significance for the function of the cell could first be studied.

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[*] *Op. cit.*, p. 137.

[†] Arndt, R. Untersuchungen über die Ganglienkörper des Nervus sympathicus. *Arch. f. mikr. Anat.*, Bd. x, 1874, S. 208.

[‡] Key and Retzius. *Studien in der Anatomie des Nervensystems und des Bindegewebes*, Stockholm, 1876.

[*] Flemming. *Beiträge zur Anat. u. Embryol. als Festgabe für J. Henle*, 1882, Bonn, p. 12. In this article the previous bibliography is thoroughly reviewed.

[†] Müller, Erik. Untersuchungen über den Bau der Spinalganglien. *Nord. med. Archiv*, Bd. xxiii, No. 26.

[‡] Flemming, W. Ueber die Struktur centraler Nervenzellen bei Wirbeltieren. *Anat. Hefte*, I. Abth., 19. Heft (Bd. vi, H. 3).

Nissl's early methods consisted of staining tissues hardened in alcohol with Magenta red or methylene blue and clearing in oil of origanum. The method has undergone several modifications, the most recent of which will be here given, inasmuch as it does not seem to be so generally known as it should be. In an article [†] published lately Nissl describes it as follows: Small blocks of tissue are hardened in ninety-six per cent. alcohol and fastened by Weigert's method with gum arabic without imbedding. The sections are received in ninety-six per cent. alcohol and stained in a watch glass. The stain is to be heated over the spirit flame until small bubbles arise which make a crackling noise (65°—70° C.); sections are then transferred to aniline-oil alcohol until differentiated. The process of differentiation is ended when no more coarse clouds of color go off into the fluid. The section is then transferred to the slide, dried with filter paper, after which some drops of oil of cajeput are applied and the sections are again blotted with filter paper. A few drops of benzine are poured on, then some benzine colophonium, and the slide is heated until all the benzine gas has been driven off.

The dye is made as follows: Methylene blue B. pat., 3.75; Venetian soap, 1.75; distilled water or soft water, 1,000. The differentiating fluid has the following composition: Ten parts of colorless aniline oil and ninety parts of ninety-six per cent. alcohol. Nissl obtains his aniline oil directly from the factory at Höchst, and keeps it carefully protected from the light.

The benzine-colophonium is prepared by pouring benzine upon colophonium and allowing it to stand for from twenty-four to thirty hours. The fluid, transparent mass which results is ready for use; the desired thickness can be obtained either by the addition of benzine or by allowing it to evaporate. In mounting, while driving off the benzine gas, the material may catch fire, but if the flame be blown out immediately, no injury is done, and the alterations produced by burning are quite characteristic and easily recognizable.

The method of Nissl permits in some respects of a very exact morphological analysis of the bodies and nuclei of the cells. His method of elective staining distinguishes within the cell bodies always two, sometimes three, constituents which are sharply separable from one another and easily recognizable. One of these constituents of the protoplasm stains intensely blue by his method, and is spoken of by Nissl as the stainable or visible formed part of the nerve cell.[*] The second constituent remains entirely unstained and is spoken of by him as the unstainable—that is, the visible unformed part of the nerve-cell body. In addition to these two constituents, in many nerve cells the well-known pigmentary deposits are visible.[†] Leaving the pigment for the time being out of consideration, much is to be learned from a study of the characters of the stainable portion and its relation to the non-stainable portion of the cell body in different cells in various parts of the central nervous system, and upon such studies Nissl has built up an elaborate classification of nerve cells, of which I shall speak in a few moments. Any one who takes the trouble to use Nissl's method in the way that he has directed can easily convince himself of the reliability of his descriptions. The stainable portions in the nerve cells show a series of different forms; smaller and larger granules of regular or irregular shape, groups of granules, and rows of granules can be made out. Often the stainable masses are arranged in threads, sometimes smooth, sometimes rough, and varying in thickness, course, and length. Often larger structures, regularly or irregularly shaped, are to be seen, which stain with varying degrees of intensity. Some of them appear homogeneous; others show an internal constitution, complex and difficult to describe. Of the larger bodies, three varieties are especially noteworthy:

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[*] The principal contributions of Franz Nissl concerning the structure of nerve cells are the following: Ueber die Untersuchungsmethoden der Grosshirnrinde. *Tageblatt der 58. Versamml. deut. Naturforscher u. Aerzte in Strassburg*, 1885, S. 506.—Ueber den Zusammenhang von Zellstructur und Zellfunction in der centralen Nervenzelle. *Tageblatt der 61. Versamml. deut. Naturforscher u. Aerzte in Köln*, 1888.—Die Kerne des Thalamus beim Kaninchen. *Tageblatt der 62. Versamml. deut. Naturforscher u. Aerzte in Heidelberg*, 1889.—Ueber die Veränderungen der Nervenzellen am Facialiskern des Kaninchens nach Ausreissung des Nerven. *Allgem. Ztsch. f. Psych.*, Bd. xlviii, S. 197.—Ueber experimentell erzeugte Veränderungen an den Vorderhornzellen des Rückenmarkes bei Kaninchen. *Allgem. Ztsch. f. Psych.*, Bd. xlviii, S. 675.—Mittheilungen zur Anatomie der Nervenzellen. *Allgem. Ztsch. f. Psych,*, Bd. l.—Ueber Rosin's neue Färbemethode des gesammten Nervensystems und dessen Bemerkungen über Ganglienzellen. *Neurolog. Centralbl.*, 1894, Bd. xiii, Nr. 3 u. 4.—Ueber eine neue Untersuchungsmethode des Centralorgans speciell zur Feststellung der Localisation der Nervenzellen. *Centralbl. f. Nervenheilk. u. Psych.*, 1894, Bd. xvii, S. 337.—Ueber die sogenannten Granula der Nervenzellen. *Neurolog. Centralbl.*, 1894, Bd. xiii.—Der gegenwärtige Stand der Nervenzellen—Anatomie und Pathologie. *Centralbl. f. Nervenheilk. u. Psych.*, Bd. xviii, 1895, S. 1–21.—Ueber die Nomenclatur in der Nervenzellenanatomie und ihre nächsten Ziele. *Neurol. Centralbl.*, Bd. (1895) Nr. 2 u. 3.—Ueber die Veränderungen der Nervenzellen nach experimentell erzeugter Vergiftung. *Neurolog. Centralbl.*, Bd. xv, 1896, No. 20, S. 9.

[†] *Centralblatt für Nervenheilk. und Psychiatrie*, 1894.

[*] Nissl says: "Bruchstücke des färbbaren, *id est*, des sichtbar geformten Theiles des Nervenzellenkörpers." *Neurol. Centralblatt*, 1894, No. 19, p. 676.

[†] The substances which stain black with osmic acid in many nerve cells, well known to all who have employed the method of Marchi in the study of human nerve centres, have recently been made the object of especial research by Rosin. *Cf.* Rosin, H. Ein Beitrag zur Lehre vom Bau der Ganglienzellen. *Deutsch. med. Woch.*, 1896, No 21, S. 495. Similar structures are abundant in the ganglion cells of the monkey, as I can assert from specimens kindly shown to me by Dr. Mellus. The relation of the substance or substances here concerned to what we have been accustomed to look upon as pigmentary deposits should be investigated.

(1) The so-called nuclear caps (*Kernkappen*), stainable masses which possess the form of regular, sometimes irregular cones, each hollowed out internally like a cap, corresponding to one pole of the nucleus upon which it sits. There may be two of these nuclear caps within one cell body, corresponding to two opposite nuclear poles, and occasionally, according to Nissl, cells are seen in which three such caps are present.

(2) So-called wedges of division (*Verzweigungskegeln*), stainable masses which fill completely the angle at the point of division of a nerve-cell process.

(3) Spindles, oblong or spindle-shaped stainable masses which are thick in the middle and become thinner toward the end, occasionally running out into thread-like forms. One-sided and double-sided spindles exist.

Any one of these forms may be vacuolated, as has been pointed out by Nissl, von Lenhossék, Held, and others.

Von Lenhossék, who has also strongly opposed the idea of a fibrillary structure for nerve cells, has in the second edition of his book * given us a very accurate description of the appearances within the ventral-horn cells and the cells of the spinal ganglia. Ventral-horn cells, examined fresh or in an indifferent fluid, show little if any structure. The protoplasm is seen as a smooth, glistening, indistinctly granular substance in which sometimes a slight concentric arrangement and, in the region of the processes, an indistinct longitudinal striation can be made out. The yellowish granular pigment is very evident in the fresh cells. As a staining method, von Lenhossék has found that thionin (Fig. 46) yields results as good as, if not better than, those obtained with methylene blue, and my own experiments with this dye have been equally satisfactory. Von Lenhossék very properly objects to the term "granules" for the stainable substance, the masses being much too coarse to be so designated. He has pointed out, further, the differences in appearance dependent upon thickness of section and upon whether the median or tangential be the mode of sectioning employed. He has described the differences in size and concentration of the stainable masses in different animal species, and states that the chromophile masses are especially coarse, both relatively and absolutely, in the ventral-horn cells of the rabbit. He has laid some stress upon the differences in appearance in the different parts of the cell; thus, the arrangement in the centre is often quite different from that visible at the periphery of the cell body, and the stainable masses in the dendrites again show different characters, variations in appearance. He has further pointed out differences in internal character between the typically stellate-shaped cells of the ventral horns and the oval elements which are met with there, and attributes the differences in shape of the "chromophile corpuscles" as he calls the masses of stainable substance * to developmental relations. De Quervain † has suggested that all the chromophile bodies represent multiples of fine granules, and von Lenhossék admits that the bodies are rarely limited by a sharp line, but that they, as a rule, show irregular, often jagged, margins, and often look at their borders as though they were broken up into small granules. He refuses to admit, however, that all such bodies represent aggregations of minute granules, a point about which more will be said when the work of Held is discussed. Von Lenhossék has studied with care the relations of the Nissl bodies in the dendrites, and finds that from always being few in number they cease to appear at a certain distance from the cell body, and as soon as the dendrite has reached a certain thinness In the dendrites, their shape and general appearance are quite different from those of the interior of the cell body; they form long, narrow, straight, rod-shaped masses, often sharpened distinctly at the ends, so as to form definite spindles whose long axes are parallel to that of the process. The varicosities on the dendrites in Golgi preparations von Lenhossék holds to be due to superficial collections of chromophile substance. His description of the origin of the axone is particularly clear and accurate.

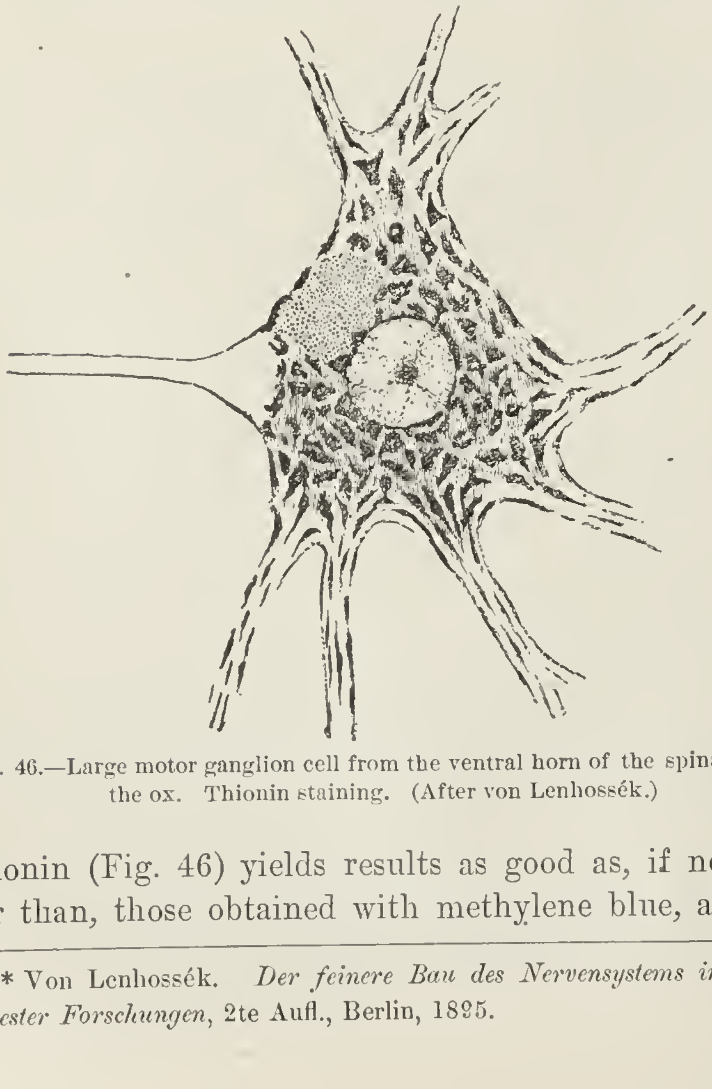

FIG. 46.—Large motor ganglion cell from the ventral horn of the spinal cord of the ox. Thionin staining. (After von Lenhossék.)

Schaffer ‡ was the first to describe the peculiar behavior of the axone and the adjacent portion of the cell body as regards Nissl's staining. The axone itself, unlike the dendrites, is entirely free from the stainable substance of Nissl, as is also the portion of the cell body immediately adjacent, known as the axone hillock. This hillock is marked off by a tolerably sharp curved plane from the granular protoplasm of the cell body, and shows at its margin not infrequently a layer of especially fine granules. With Kronthal's method, the axone and axone hillock stain intensely in methylene blue, very much as in the vital staining of Ehrlich. But Benda found that when specimens thus prepared were cleared in creosote the axone and axone hillock lost their color, and only the stainable substance of Nissl retained the dye in the cell body and the dendrites. Benda * makes one exception to this statement. In the basal axones of the pyramidal cells of the cerebrum, especially of those known as the giant pyramidal cells of Betz, the collaterals which come off at right angles are visible when the preparations are stained by Benda's method. Just at the beginning of the collateral, a small wedge-shaped granulation, in section triangular, takes up the methylene blue, the axone itself remaining quite unstainable. I have met with this observation nowhere else in the bibliography.

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* Von Lenhossék. *Der feinere Bau des Nervensystems im Lichte neuester Forschungen*, 2te Aufl., Berlin, 1895.

* The stainable substance of Nissl has recently been designated "tigroid" (from the Greek word τιγροειδής, spotted) by von Lenhossék, in an article entitled Ueber Nervenzellenstructuren. *Verh. der. anat. Ges. auf der 10. Versamml. in Berlin*, 1896, S. 15.

† De Quervain, Fritz. Ueber die Veränderungen des Centralnervensystems bei experimenteller Kachexia thyreopriva der Thiere. Virchow's *Archiv*, Bd. cxxxiii, 1893, S. 481.

‡ Schaffer, K. Kurze Anmerkung über die morphologische Differenz des Axsencylinders im Verhältnisse zu den protoplasmatischen Fortsätzen bei Nissl's Färbung. *Neurol. Centralblatt*, xii, 1893, S. 849.

Von Lenhossék has not been able to make out definite fibrils in the cell body, and one gains the impression that he disbelieves in their existence. He has taken the trouble to stain the cells of the brain of a torpedo, the object of Max Schultze's classical description, by Nissl's method, and denies the existence of fibrils in them.

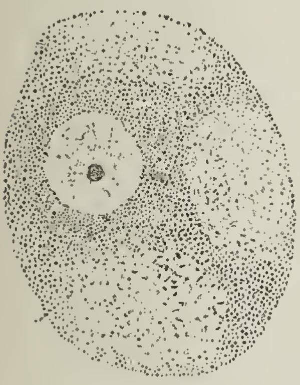
Fig. 47. — Spinal ganglion cell from the ox showing clear spaces (" *Vacuolen* "). Magenta staining. (After von Lenhossék.)

In his study of the spinal ganglion cells, von Lenhossék used specimens from the ox (Fig. 47) as well as human tissues. In the fresh cells, teased without the action of reagents under high powers, he could make out a distinct, finely granular consistence, the granules being closely and evenly arranged throughout the whole cell. He could not decide, however, from the fresh tissue whether he had to deal with actual granules or with the optic appearances of threads. In Nissl preparations, however, and in specimens stained in thionin the cell appeared nearly always to consist of two distinct layers—an internal perinuclear layer, which stained deeply in the basic dye, and a peripheral layer of lighter color, the two layers passing gradually over into one another, although occasionally a sharp separation between the dark endoplasmatic and a lighter ectoplasmatic zone could be made out. Von Lenhossék could not find in the ox the concentric arrangement of the granules described by Nissl in human spinal ganglion cells, at least in the majority of cells. He noticed the uneven size of the stainable masses and their arrangement into a networklike appearance, as described by other authors. In some cells of the spinal ganglia von Lenhossék found, in accordance with Flemming's observations, granules which are much coarser than those ordinarily seen in such cells, but he does not think a classification into coarsely granular and finely granular cells is desirable, inasmuch as both kinds lie everywhere intermingled and there appears to be no local connection between the extent of the cell and the size of its granules. Generally speaking, the coarser granulation is seen in the smaller cells, the large cells having always a finely granular structure, appearances which contrast strongly with those met with in the cells of the anterior horn. Von Lenhossék describes at some length what every one who has studied the spinal ganglia must be acquainted with—namely, the presence of clear areas in the protoplasm of some of the cells. These areas are to be found, as a rule, in the peripheral portion of the cell, sometimes as many as three or four being present in a single cell. They are spherical or elliptical in shape, often larger than the nucleus, and do not represent structureless spaces filled only with fluid, but contain normal ground substance, and besides often show in their interior a few granules widely separated from one another. The exact nature of these vacuole-like spots is as yet not clear. It is not impossible that some of them correspond to the position of terminal end discs of side fibrils coming off from the axone and running back to the cell body, such as have been described by Huber, of Ann Arbor,* in the spinal ganglion cells of the frog (Fig. 48). He states that there is usually found a clear zone of protoplasm surrounding the expanded end of the processes.

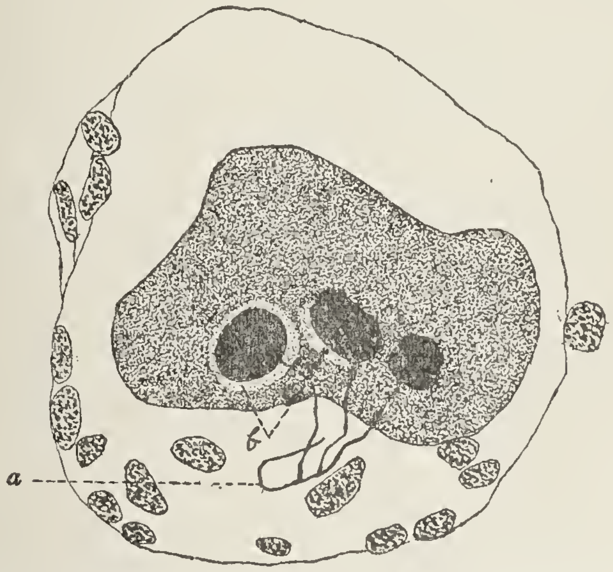

Fig. 48.—Spinal ganglion cell of *Rana Catesbiana*. (After Huber. A side fibril, *a*, is to be seen dividing into three branches, each of which terminates in an end disc ; the clear zone of protoplasm, *b*, beneath two of the discs is shown.

Nissl has spent several years in the most exact investigations of the nerve cells in the most different parts of the nerve centres of man and animals, and has come to the conclusion that definite types or varieties of nerve cells exist, varieties which are constant not only in the same animal, but often exist characteristically in homologous localities in a whole series of animals. He has had some difficulty in finding suitable designations for these types of nerve cells. In the present state of our knowledge, a nomenclature based upon function is not justifiable, and Nissl has been compelled to classify the cells purely from their morphological characteristics. According to him, all the cells in the nerve centres, except the so-called *chromophile* nerve cells, can be divided into two main classes. The first group includes the nerve cells which possess a well-marked cell body which surrounds the nucleus completely on all sides. The protoplasm has a distinct contour. These cells Nissl calls *somatochrome* nerve cells.

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* Benda, C. Ueber die Bedeutung der durch basische Anilinfarben darstellbaren Nervenzellstructuren. *Neurol. Centralblatt*, Bd. xiv, 1895, No. 17, S. 759.

* Huber, G. Carl. The Spinal Ganglia of Amphibia. *Anat. Anzeiger*, Bd. xii, 1896, No. 18, S. 417–425.

(To be continued.)

SLOWLY ABSORBABLE ANTISEPTIC CATGUT,

BY A MODIFICATION OF THE BOECKMANN METHOD.*

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Beyond question the ideal method of repairing a traumatism is by accurately approximating the separated parts, and holding them in such position by a material which will keep them in apposition until they unite with sufficient strength to withstand physiological strain, and then by absorption of the holding material to leave nothing foreign in the tissues. To accomplish this the material used must be aseptic, sufficiently strong to resist strain, and must not be absorbed before the tissues are united. Neither should it be too slowly absorbable, for, if so, it frequently acts as does non-absorbable material, producing after-trouble in many cases. For cases where there is not much strain, and where rapid absorption is not contraindicated, as in suturing the peritonæum, ligating blood-vessels, etc., catgut prepared by Boeckmann's improvement upon the heat-sterilization method of Benkisser is all that can be desired. Catgut so prepared is aseptic, strong, and very convenient. I have used it, have seen it used in many cases, and consider it one of the greatest aids in surgical technics. It is, however, not well adapted for skin sutures or for sewing up the fascial planes and muscles where the latter are liable to strain before becoming united, as in laparotomies, operations for the radical cure of hernia, and the like. In the skin it is not desirable, from the well-known difficulty or impossibility of making the skin entirely aseptic, and, as sterile catgut itself is an excellent medium for the growth of bacteria, the micro-organisms remaining in the deep layers of the skin, by growing into the catgut, avoid the full inhibitory or destructive action of the leucocytes. In this way a slight infection, which with non-absorbable sutures like silkworm gut or silver wire could be overcome, may, by the aid of the nourishment afforded by the sterile catgut, enable the bacteria to gain ascendency, and so produce stitch abscess. This has been recognized by Boeckmann, who has done so much to perfect the heat-sterilization method, and who says: *

"In the skin, which only with difficulty, if at all, can be rendered aseptic, sterile catgut will likely produce stitch abscess, as the catgut will form a good culture soil for the bacteria present. In order to preserve catgut as a skin suture to the exclusion of all others, it will be necessary, so far as I am able to judge, to continue along the line indicated in retaining the fat, and seek an agent which will render catgut an impossible culture medium and remain with it until the last fibre is absorbed."

To render catgut a desirable skin suture it must, therefore, be not only aseptic but antiseptic as well, and this is accomplished by the means hereafter described. The use of absorbable sutures in the skin is, however, secondary to their use in the deeper tissues, where for perfect result they must neither be too slow of absorption, as is the difficultly sterilizable chromicized gut, nor too quickly absorbable, as is the heat-sterilized material. Kangaroo tendon has been largely exploited as fulfilling these indications, but it has many disadvantages. It is difficult to sterilize, is of unequal strength and size, and is so weak in places that it frequently breaks when tightened during tying, so delaying the operation and annoying the operator; also, as I will show farther on, its slowness of absorption has been greatly overrated. For some time I used kangaroo tendon for deep suturing in hernia operations and like work, completing its preparation and sterilization by boiling it in a 1-to-500 solution of mercuric bichloride in alcohol for an hour and a half. It answered well when so treated, being sufficiently slow of absorption to insure union of the tissues, but was still open to the annoying objections of irregularity in size and strength, weak places, and considerable cost. Thinking that possibly its chief value—slow absorption—was due to the boiling in bichlorided alcohol, and that possibly the unbichlorided tendon was no more slowly absorbable than the heat-sterilized catgut, I determined to test it experimentally. A military convict, having received a deep cut on the outer surface of the upper arm, I thoroughly cleansed the wound and inserted two sutures of unbichlorided "Fowler's" kangaroo tendon and two of No. 8 heat-sterilized catgut, about an inch from the wound, deep into the tissues, and applied an aseptic dressing. On the fifth day the dressing was removed, and the wound was found perfectly dry and united without a trace of suppuration. This was important, as suppuration materially affects the lasting qualities of animal ligatures. On examining the sutures at three places where the kangaroo tendon emerged from the skin, the tendon was completely eaten through by the leucocytes and lay loose and dry upon it. The fourth end was still not entirely absorbed at the skin level, and the part immediately beneath the skin had still sufficient cohesion, so that upon gentle traction it was withdrawn. The part withdrawn was about seven millimetres in length, white, and very soft. Of the catgut sutures, two ends were lying loose and dry on the skin; the other two were still attached, but somewhat less so than was the fourth tendon end. The softened end of the kangaroo tendon was hardened, sectioned, stained, mounted, and examined microscopically, when it was found infiltrated with leucocytes, which had penetrated every part beneath the skin level, softening and nearly absorbing the tendon fibres.

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* Read by title at the annual meeting of the Association of Military Surgeons of the United States, Columbus, Ohio, May 22, 1897.

* *Journal of the American Medical Association*, vol. xxvi, pp. 171, 226.

Fig. 1, a reproduced photomicrograph of one of the sections, shows admirably the extensive destruction of the tendon, and the ease with which the leucocytes had penetrated to every part. Several sections were stained for bacteria, but none could be found, and this, in connection with the dry, united condition of the wound, makes it reasonably certain that the absorption was aseptic and entirely due to the action of the leucocytes. From this I can not argue otherwise than that kangaroo tendon in itself is not very resistant to absorption. My next experiment was to test the relative absorbability of the bichlorided tendon and bichlorided catgut, and, having an osteotomy of the tibia, I sewed up the incision with deeply placed sutures of bichlorided tendon and catgut. I hoped to make the operation aseptic, but the bone was already infected, and the symptoms and temperature were such that the dressing had to be removed on the fourth day, and the wound opened and irrigated. All the sutures, both tendon and catgut, were found holding tensely. This could have been due but to one cause—viz., the bichloriding of the sutures—for under similar circumstances they would either have been entirely disintegrated within the pus-bathed wound, or, at least, softened and eaten through. One of the catgut sutures was removed, and the part lying within the suppurating wound was hardened, sectioned, and examined. The difference between the bichlorided catgut and the unbichlorided kangaroo tendon, before described, was as striking as was the disintegrated condition of the latter and the still strong condition of the catgut. This is shown in the reproduced photomicrograph, Fig. 2, where it is seen that the leucocytes have attacked the edges of the catgut strand, but were unable to gain entrance to the interior, the latter being entirely free from them and unchanged. The bichloriding of the catgut had made it difficult of attack by the leucocytes, their assaults upon it being confined to its exterior, and the progress of absorption being thereby greatly slowed, thus differing strikingly from the unbichlorided kangaroo tendon, where absorption was hastened by the free ingress of the leucocytes to every part.

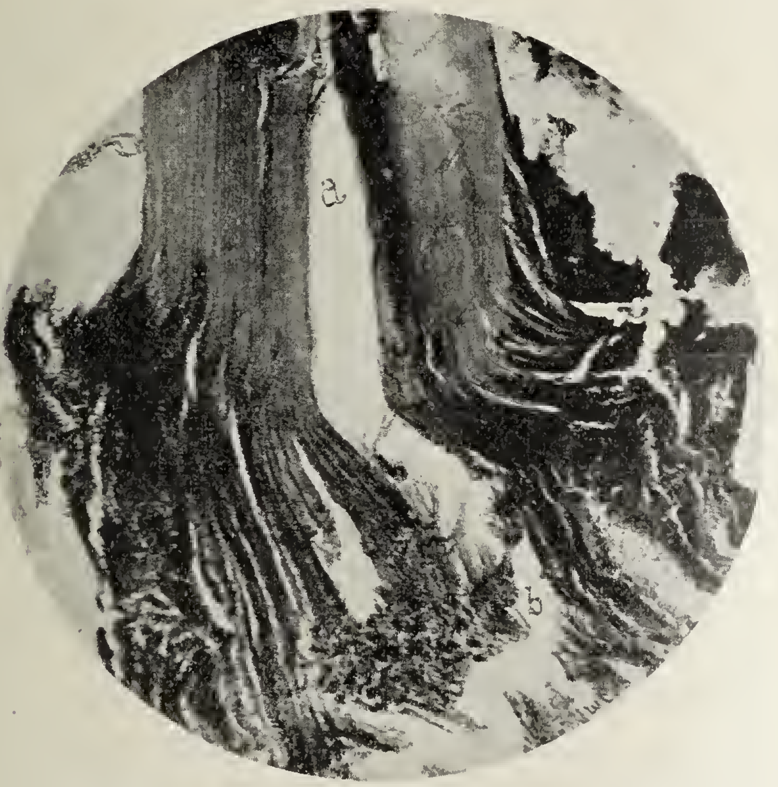

Fig. 1.—Longitudinal section of kangaroo tendon suture, × twenty-five diameters, showing disintegrated condition of part *b* after being five days below the skin. The part *a*, above the skin, is unchanged.

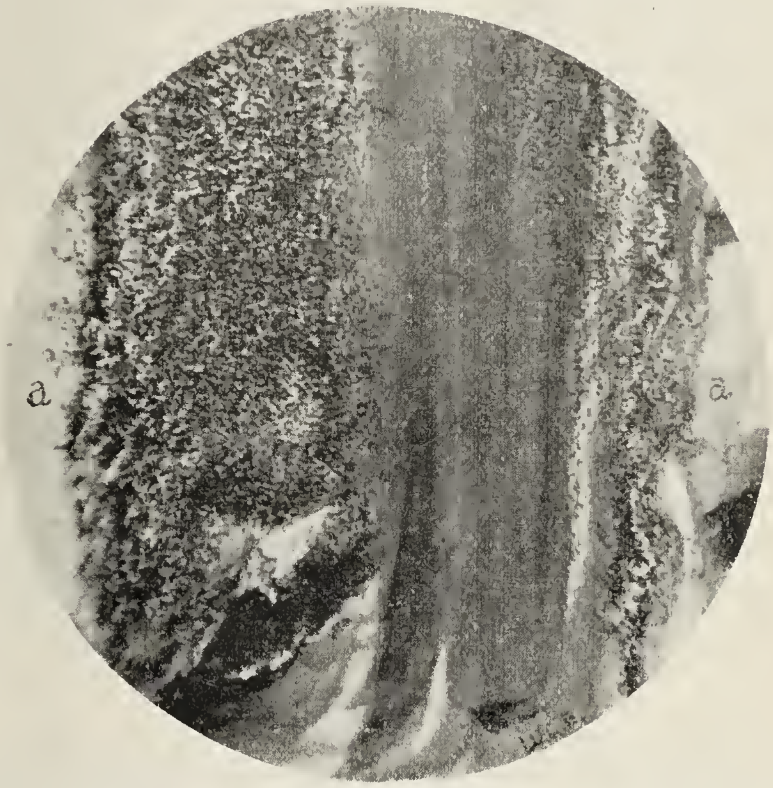

Fig. 2.—Longitudinal median section of bichlorided catgut sutures, × eighty-five diameters, showing condition after three days in a suppurating wound. The leucocytes have attacked and disintegrated the outside, *a*, but have been unable to penetrate or soften the interior.

These experiments convinced me that boiling animal ligatures in bichlorided alcohol made them much more slowly absorbable, and therefore adapted for use where such slow absorption was a desideratum, and at the same time, by its thus impregnating them with an antiseptic, they became better adapted for use as skin sutures for the reasons before given.

Hence, by the method of dry heat sterilization, as perfected by Boeckmann, we have a convenient sterile catgut, useful for the ligation of vessels, and for buried suturing, where the tension is not great and where rapid absorption is allowable. By boiling the same material in bichlorided alcohol it is available for use where there is tension and where slow absorption or an antiseptic material is required. Since making the above experiments I have used the boiled bichlorided catgut clinically in three cases where I would previously have used kangaroo tendon, and in one where I would have trusted only to silkworm gut or silver wire. Of the three cases, two were operations for hernia and one was removal of the appendix for recurring appendicitis. The result in these cases was most excellent; union was primary, febrile action (see chart, Fig. 3) was moderate, and the after-condition was all that could be desired.

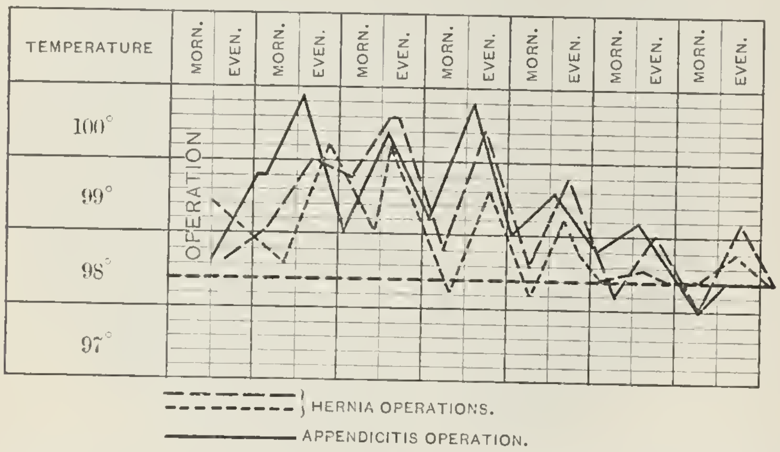

Fig. 3.—Chart showing temperature curves of two cases of operation for hernia and one case of removal of appendix in which sutures of heat-sterilized catgut boiled in bichlorided alcohol were used.

Contrary to the opinion expressed by Senn,* the amount of wound secretion was not unusual, nor was the irritating effect of bichloride apparent. The amount of bichloride contained in the sutures left in the tissues is certainly small, and can readily be disposed of without injury. Probably there is as little danger of bichloride irritation as of iodoform poisoning from using the formalined catgut soaked in an alcoholic solution of iodoform, recommended by Senn.

The fourth case was an operation for acute suppurative appendicitis, and demonstrated the excellence of antiseptic, slowly absorbable animal sutures in suppurative cases. In this case, after evacuating the appendical abscess and inserting a rather large gauze drain, I closed the incision, except the opening for the drain, with deep sutures of bichlorided catgut. The case progressed favorably, and was returned to light duty at the end of the eighth week after operation. There was considerable discharge from the wound, the pus having a strong fæcal odor, and had non-absorbable suture of silkworm gut or silver wire been employed there would have been extension of infection to these, and convalescence would have been delayed until every suture was either discharged spontaneously or removed. The catgut impregnated with bichloride was inimical to infection, and union went on synchronous with absorption of the sutures.

The method of sterilization of catgut by dry heat has been fully described by Boeckmann,* his process briefly being to wrap suitable lengths of raw catgut in paraffined paper, inclose these in envelopes, place them in a hot-air sterilizer, and raise the temperature gradually to 140° C., where it is maintained for three hours. While catgut so prepared may be made antiseptic and slowly absorbable by removing it from the envelopes and boiling it in bichlorided alcohol, it is unnecessary to wrap it in paraffined paper and inclose it in envelopes before heating. It can be more simply and easily prepared by placing coils of catgut of suitable length in clean Petri dishes, or straight strands may be placed in glass tubes with the ends of the tubes closed with absorbent cotton. These are then placed in the hot-air sterilizer at 100° C., and raised slowly to 140° C., where they are kept for three hours. To bichloride the catgut so prepared a sterilized glass-covered jar—a pint fruit jar answers well—is filled about half full of a 1-to-500 solution of bichloride of mercury in ninety-five per cent. alcohol, and in this the heat-sterilized catgut is placed after removal from the Petri dishes, tubes, or envelopes with sterilized forceps. It is then boiled slowly on a water bath, and preserved either in the jar in which it was boiled or in a sterilized glass-capped bottle filled with a solution of bichloride in alcohol of the same strength, and from which it is removed with a sterilized forceps when required for use. The strength of the gut is not impaired by boiling. The following table gives the tensile strength of the catgut under different conditions, and as compared with kangaroo tendon:

Table showing Maximum, Minimum, and Average Tensile Strengths, in Pounds, of Catgut and Kangaroo Tendon by Five Trials of Different Strands, taken at Random from Commercial Samples, and treated in the Different Ways indicated and soaked in Normal Salt Solution before Testing.

	MAXIMUM.		MINIMUM.		AVERAGE.	
	No. 0.	No. 9.	No. 0.	No. 9.	No. 0.	No. 9.
Raw catgut	6	36	$2\frac{3}{4}$	21	$4\frac{1}{2}$	$25\frac{1}{5}$
Heat-sterilized catgut	$4\frac{1}{2}$	35	$2\frac{3}{4}$	19	$3\frac{3}{4}$	$22\frac{4}{5}$
Heat-sterilized catgut, boiled in bichlorided alcohol	5	34	$3\frac{1}{4}$	20	$4\frac{1}{8}$	24
Catgut by Hofmeister's (formalin) method	3	$17\frac{1}{4}$	2	12	$2\frac{1}{2}$	$15\frac{1}{8}$
Fowler's kangaroo tendon	15		7		$11\frac{2}{5}$	

It is to be noted that the tests were made after soaking the materials in normal salt solution. This I consider the proper method, for it places them in much the same condition as when in the tissues. Catgut and tendon so treated have somewhat lower tensile strength than when dry. The great variability in strength and comparative weakness of kangaroo tendon is shown by the table, as well as the comparative uniformity of the catgut. The tensile strength of the No. 9 catgut only is to be compared with that of the tendon. No. 0, being fine, was tested simply to show the strength of fine gut under the different methods. But two sizes of catgut are compared, the fine and coarse; others are intermediate in strength, and would show only variations in strength between the extremes given. The larger sizes, as Nos. 7, 8, and 9, are sufficiently strong for all purposes where strength is required, and Nos. 0 and 1 answer well for fine suturing; No. 3 being suitable for tying small arteries and intermediate work.

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* *Journal of the American Medical Association*, vol. xxviii, p. 1220.

* *Journal of the American Medical Association*, vol. xxvi, pp. 167, 226.

Catgut prepared by the formalin method of Hofmeister has been considerably exploited of late. I can not think it in any way equal to the bichlorided catgut, and it has some decided points of inferiority. It swells much more when soaked in normal salt solution, is more slippery, and is much weaker, as is shown by the table given. Its relative rate of absorption will have to be determined by experiment, but judging from the way in which it swells when placed in salt solution I am inclined to believe that it is not very resistant. Certainly heat-sterilized catgut, boiled in bichlorided alcohol, is both antiseptic and aseptic, strong and slowly absorbable, and where a material having these properties is required it can be relied upon..

THE HISTORY, TREATMENT, AND PATHOLOGY OF AN UNCOMMON EVOLUTION FROM A NÆVUS TELEANGIECTODES.

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The history, description, and treatment of this case are as follows:

May 30, 1896.—A female infant, aged five months. A few weeks after her birth there was noticed at the left of the base of the neck, posteriorly, a finger-nail sized, crimson, capillary nævus. It grew very slowly until a month ago, when (the parents say, after manipulations by the physicians, necessary in an examination) it began to grow rapidly in all directions. At present the red, irregular, mottled surface is of the size of a silver dollar, a fourth of an inch thick, and inclines to break down. (Tincture of iodine has lately been applied.) This part forms the top of a round, half-hen-egg-sized, soft, compressible tumor, which extends into the subcutaneous tissue, lying between the posterior fold of the neck and the spine of the left scapula. The skin below the original nævus is normal. The tumor becomes tense, and the veins in its cutaneous walls stretched, when the child cries.

Shortly after birth there was a diffuse reddening over the occiput, and now there is a distinct venous dilatation—cavernous in character—over the root of the nose. There have never been other nævi in the family. The child is fairly well nourished; the incisor teeth are thought to be beginning to form, as indicated by a little alveolar irritation.

The clinical symptoms justified the diagnosis of cavernous angeioma, progressing from the original teleangiectatic nævus of the skin. After taking into mature consideration the age of the child and the dangers of hæmorrhage, even in small quantity, to an infant, it was decided to ligate the tumor primarily, and to leave the further surgical treatment subject to the circumstances which might arise.

Chloroform anæsthesia having been produced, a collar of skin was dissected downward around the base of the tumor, leaving a groove (Fig. 1). Two large, straight needles were threaded with Tait's silk, each ligature doubled. It was my intention to put one needle through and then to pass the other at right angles to it, and, by the first as a guide, to have all the threads cross at a common point. But the holder snapped the eye of the first needle and I had to use only one. The double-threaded needle was then passed through the base, where freed of skin, from the upper to the lower side. The thread was cut at the eye of the needle, left *in situ*, and the needle, threaded in the same way, was then passed through at right angles to the first thread (see Fig. 2). While an assistant firmly held the free ends of the ligatures the tumor was ligated in quarters (as shown by the dotted lines in Fig. 2) deep in the subcutaneous tissue. Though a little difficult, this method of ligation appeared less complex than those figured in the text-books.

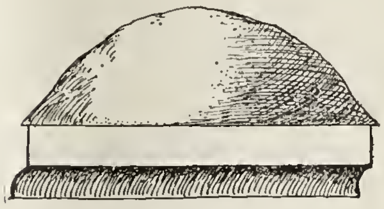

Fig. 1.—Showing "collar."

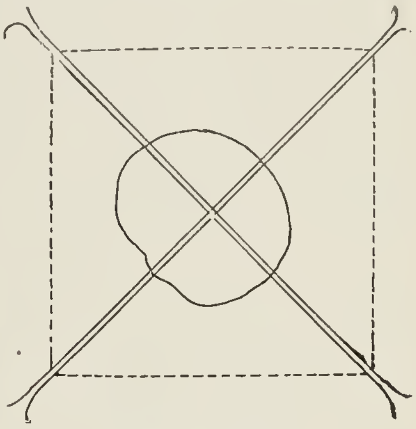

Fig. 2.—Ligatures.

My first surprise came with the scant bleeding through the punctures. My next, when I cut away about half the depth of the tissue above the ligatures. Instead of finding a cavernous condition beneath the surface nævus, I discovered an angeio-lipomatous growth, dilated vessels, fat, and connective tissue. (Unfortunately, the excised portion was lost in the slops.) After cutting away this tissue the cut surface was cauterized with the Paquelin at a dull-red heat. Despite the ligatures and the cauterization there was one central spurting artery and some venous oozing. The application of iodoform, one part, boric acid, five parts, increased the bleeding somewhat. Hot water was used to control this, and a circular ligature was tightly drawn around the base of the tumor in the groove. Finally, a thin layer of cotton, wrung from very hot water, was applied to the cut surface, and over this the regular antiseptic dressings. Bleeding was inconsiderable afterward.

When I discovered my error (a justifiable one) in diagnosis, I was anxious to complete the operation by excision and suturing then, but the child had been long enough under chloroform, and I preferred safety to haste.

For a week the history of the case was uneventful. No fever, and apparently no pain. On the fourth day a little odor was perceptible. On the fifth day all dressings but the cotton on the surface were removed. There was pus in the ligature furrow. After cleansing, iodoform, one part, boric acid, five parts, was thoroughly applied and the dressings were renewed. On the sixth day all dressings were removed, one point in the cut surface bleeding a little. The ligatures had cut in deeply. A fold of ten-per-cent. iodoform gauze was fitted into the furrow and antiseptic dressings were applied over all.

At the end of the seventh day chloroform was again administered. The remainder of the growth was cut away at the level of the ligatures (the whole tumor and all around it having been first cleansed of pus, etc., with peroxide of hydrogen, ether, and bichloride solution). Spurting from a central artery was controlled by torsion. The entire wound was considerably larger than a silver dollar (the edges of the collar were turned inward a little), and its shape was semilunar, with the straight edge upward. All detritus was removed with the curette and bleeding points were twisted. The fat beneath the upper and lower edges and in the floor down to the edge of the trapezius was dissected out. Then a triangular piece of skin and fat was cut from each end of the wound below its straight edge to permit of coaptation. The wound having been thoroughly cleansed, its edges were brought together with catgut and fine silk. (Tension sutures should have been used in the centre, but this was not known until the others had cut through some days later, so none had been prepared. Adhesive plaster was useless, and the parents preferred a small scar to further suturing.) Iodoform, boric acid powder, ten-per-cent. iodoform gauze, and cotton bandages were then applied. (During the bandaging the child's head was raised a little too high, with resulting collapse, from which it reacted very slowly.)

The next five days were uneventful. The dressings were then removed under strict antisepsis. The wound was perfectly clean, and the ends had healed by first intention. The central sutures had failed, leaving a small, half-inch-wide ellipse; grayish detritus in the floor. The dressings were then changed every other day, the detritus being removed from the centre by rubbing, the stitches having been removed when no longer needed.

On one occasion it was necessary to apply five per cent. nitrate-of-silver solution, and, at last, to curette away a few exuberant granulations.

Healing was entirely complete in a little over two weeks from the last operation. The scar was scarcely two inches long and an eighth to a quarter of an inch wide in the centre, soft and pliable. The treatment from the beginning of the last operation was defective in the omission of tension sutures, and it was discovered near the time for removal of the last bandage that the child could bend the neck far enough forward to expose the wound under the upper margin of the bandage. In spite of this there was never any pus after its removal at the beginning of the second operation. So much for the condition of the child and the benefits of phagocytosis. All the treatment was conducted antiseptically. I have recently learned that the child remains in the best of health.

The origin, course, and physical characteristics of the tumor justified my original diagnosis. After the ligation I wrote the diagnosis "angeiolipoma." The microscope confirmed this diagnosis and showed, besides, an unexpected element.

There are certain methods of treatment for all diseases which are the best, but circumstances often render necessary the choice of some other method. It was best in this case to try ligation first, with the diagnosis made. Later events showed that excision should have been done at first.

The case is interesting in that it presents an uncommon pathological combination, obscured by physical signs indicative of a different condition. While this combination is not unique, it is sufficiently rare to justify its being placed on record.

Pathology.—On section the upper surface of the last-removed portion showed brownish-black, from the cauterization and subsequent necrosis, projecting irregularly downward. Below this the growth appeared composed of varying proportions of soft fatty and solid tissue, with a few cut ends of vessels.

In so far as possible the microscopic sections were made from the non-necrotic portion.

Histology.—Portions of the growth were hardened in alcohol, imbedded, and cut in celloidin. The sections were stained by the hæmatoxylin-eosin method. The general cellular structure was clearly brought out by the hæmatoxylin. The easy recognition of the masses of dilated, mostly capillary, vessels, full of blood-corpuscles, was due to overstaining with eosin.

Small portions of the specimens show ordinary connective tissue (lower part of Fig. 3), other parts are areas resembling myxomatous degeneration (Fig. 4).

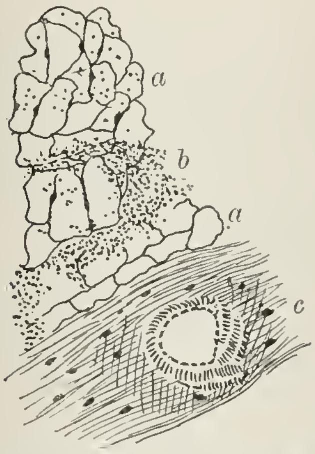

Fig. 3.—Lipoma. Adipose tissue adjoining connective tissue. Inflammation evident. *a*, fat; *b*, outline of b. v. round-celled inflammation; *c*, b. v. cut obliquely. Seitz, 4 oc., 4 obj., enlarged.

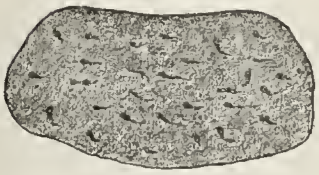

Fig. 4.—Myxomatoid degeneration.

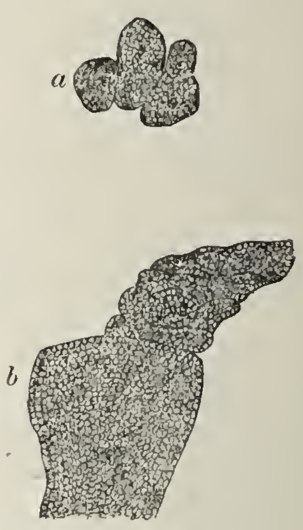

Fig. 5.—Angeioma. *a*, dilated, distinct-walled capillaries filled with blood-corpuscles; *b*, irregular spaces filled with corpuscles. No visible endothelium. Seitz, 4 oc., 4 obj., enlarged.

Blood-vessels are numerous throughout. These sections show also masses of dilated blood capillaries packed with corpuscles, their walls more or less distinct and showing extra cells, as in inflammation (Fig. 5). In some places the dilated capillaries are inclosed in masses of round and spindle cells, as in angeiosarcoma. Other parts show an excess of empty blood-vessels or capillaries lying in a mass of round and spindle cells (Fig. 6). Portions corresponding to the part cauterized are composed of dense aggregations of round and spindle cells and show no blood-vessels, or but few. The color under the microscope is nearly black. This part of the sections appears purely inflammatory.

The adipose tissue seems to have an excess of blood-vessels, many of them dilated, and showing inflammatory action (upper part of Fig. 3).

Another section, nearly one fourth the diameter of the whole growth, shows the dense cellular condition, some of the cells half size, alternate fat lobules, and connective tissue, some of it myxomatoid, and capillary dilatations, as described below. In points the capillary angeiomata lie next to the fat.

In the adipose and connective tissue there are both scattering round cells and many aggregations in well-defined clumps. The round and spindle cells are not so large as the normal connective-tissue cells. A few giant cells were discerned in the cellular masses away from the densely inflammatory parts. Caryocinesis could not be made out. About one fourth of this last section is composed of masses of dilated vessels, mostly capillaries, stuffed with blood-corpuscles. The walls of many appear ill-defined, no endothelium, while others showed a distinct endothelial lining (Fig. 5). I could see no evidence of angeioblastic formation of new vessels.

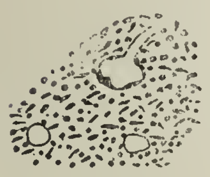

Fig. 6.

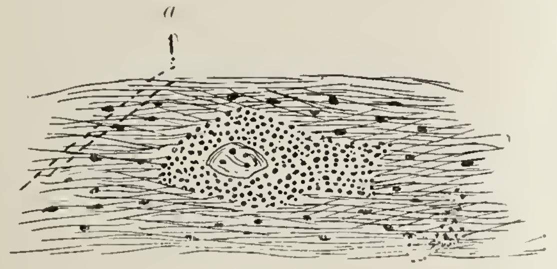

Fig. 7.

Fig. 6.—Angeio-sarcoma (?). Round-celled and spindle-celled infiltration around empty blood-vessels in the midst of an angeiomatous area. Seitz, 4 oc. 4 obj., enlarged.

Fig. 7.—Sarcoma. Two peculiar collections of small round cells in connective tissue portion, near fat lobules. a, outline of capillary. Seitz, 4 oc., 4 obj., enlarged.

The arrangement of new cells, as partly shown in figures, as well as in parts not drawn, with relation to the vessels, or in distinct collections, without visibly present vessels, and certain aggregations of round and spindle cells, tempt me to add sarcoma (small-celled) to the diagnosis (Figs. 6, 7, and 8). The only reason this addition is made doubtful is that the sections were from a tissue previously subjected to inflammation by the Paquelin above and the ligatures below.

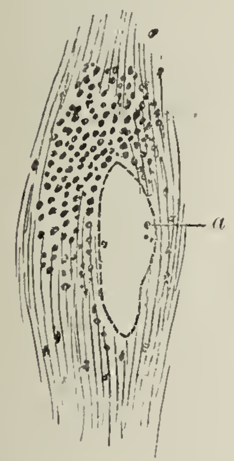

Fig. 8.—Capillary vessel cut obliquely. Round-celled sarcoma (?). Nodule at one side. a, diapedesis. Seitz, 4 oc., 4 obj., enlarged.

Senn's *Pathology and Surgical Treatment of Tumors* (1895) and Delafield and Prudden's *Handbook of Pathological Anatomy and Histology* (eleventh edition) refer to the close relation of sarcomatous growths with the blood-vessels. Senn speaks of the frequency with which the stroma of all tumors undergoes myomatous degeneration, and Delafield and Prudden say that mucous degeneration is frequent in the various forms of sarcoma.

Delafield and Prudden say of lipoma: "Occasionally the blood-vessels are abundant and dilated—angeiolipoma." We know of the frequency of angeio-sarcoma, so it is possible to have an angeioliposarcoma, with an added myxomatous element, and all may develop from a cutaneous angeioma.

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ŒSOPHAGOTOMY

AND REMOVAL OF DENTAL PLATE WITH UPPER CENTRAL INCISOR TOOTH.

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April 15, 1897.—Stella B., a young woman about twenty-two years of age, had swallowed a broken dental plate with one central upper incisor tooth which had become lodged in her œsophagus.

16th.—Saw her for the first time. Her voice was deficient, and she was suffering much pain, which she located above the sternoclavicular articulation, particularly of the left side; she was only able to swallow fluids, and in but small amounts at a time; palpation negative; temperature, 99°. Attempts had been made to pass instruments, failing because her mouth and pharynx were so irritable that even the use of a tongue depressor made her gag, vomit, and stop breathing. I gave fluid diet, and turned the case over to Dr. T. Ritchie Stone, Dr. de Schweinitz, and Dr. Vaughan, to have a skiagraph taken and the plate and tooth located; several attempts were made without success.

17th.—Temperature, 100.2°; respirations, 20; pulse, 80; voice somewhat improved, other symptoms unchanged; she is in excellent spirits and willing to undergo anything to get relief. To render her throat and mouth less irritable I have given her ninety grains of potassium bromide in three doses, to no avail; I now spray the mouth and pharynx as thoroughly as possible with a four-per-cent. solution of cocaine, also with no result. After I had used several varieties of forceps of different shape, and also the stomach tube—the patient heroically assisting in spite of nausea, vomiting, pain, and strangulation—a flexible bullet prove was tried, which at five inches and a half from the incisor teeth gave a metallic touch and a click which was heard by several persons standing near. An operation was advised and accepted.

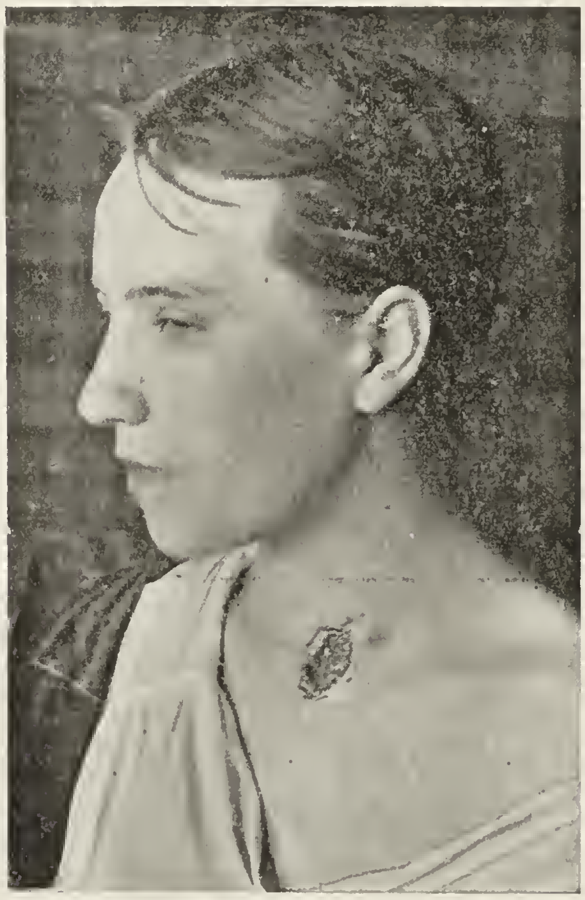
Operation at 2 P. M.—Chloroform narcosis. The presence of the foreign body in the œsophagus was again demonstrated, and again its removal by forceps failed. Neck exposed. The skin of the neck was drawn a little to the median line and a two-inch incision was made along the inner edge of the sterno-mastoid muscle, making a sort of valvelike opening down close to the sterno-clavicular articulation; the jugular vein and common carotid artery were plainly exposed and held to the outer side by smooth retractors, and because of the shortness of her neck the wound seemed very deep and the œsophagus out of reach. By my passing a long curved forceps into the œsophagus, through the mouth, the tip of which was felt and cut down upon, the edges of the œsophageal wound were caught by clamps and secured. This opening was enlarged to admit the little finger; nothing could be felt below, but by reversing the direction of the finger the edge of the dental plate was felt behind the upper limits of the trachea. The plate was held very much like the damper in a stovepipe, at the sides, having space above and below—in this case anterior and posterior—so that fluids and instruments could easily pass. The tooth was above (superior) out of reach. The broader base was presenting. The opening into the œsophagus had to be further enlarged, and after careful manipulation, so as to injure the mucous membrane as little as possible, the plate with its tooth was removed. Mucus and frothy air bubbles oozed into the wound. The wound was partially closed by two silkworm-gut sutures and lightly packed with sterile gauze. There was not a drachm of blood lost.

At 7 P. M.—Respirations, 20; pulse, 86; temperature, 101.2°. She is given a solution of boric acid to rinse her mouth with and to drink, to allay thirst, to cleanse the buccal cavity and œsophagus, and to irrigate the wound as it escapes; also given nourishment by the rectum.

18th.—Respirations, 20; pulse, 120; temperature, 100.6° at 8 A. M. Complains of great thirst and hunger; dressings, wet with mucus and boric-acid solution, having a most peculiar sweetish, offensive odor, are changed. The two sutures are removed because they might obstruct drainage. Respirations, 20; pulse, 114; temperature, 101.6° at 8 P. M.

19th.—Respirations, 24; pulse, 94; temperature, 100°. Angry because of thirst and hunger. Dressings soaked as before and changed. Gauze packing discontinued. Wound is well irrigated when she swallows fluids. She is given milk, ice-cream, or water-ice at intervals; nourishment by rectum stopped; boric-acid solution continued.

21st.—Respirations, 22; pulse, 96; temperature, 99°. Voice about normal; does not complain at all; diet and treatment as before. Dressings changed daily; the discharge less in amount and not offensive. Out of bed.



28th.—Discharge stopped; granulating wound remains. Diet increased to mush and milk and such soft foods. She admits that she has just "borrowed" some bread and potatoes and enjoyed them.

Photograph taken to-day.

This broken tooth plate with the tooth measures an inch and a half by an inch and a quarter, and has sharp and pointed edges.

I believe it would hasten recovery in such cases to suture the œsophageal wound with fine gut or silk, and pack lightly down to it, so as to have plenty of drainage if required.

A PLEA FOR

A MORE ACCURATE INVESTIGATION OF EPILEPSY.

By L. PIERCE CLARK, M. D.,
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Epilepsy should be carefully studied before we make any attempt to solve the problem of what mental diseases consist. The disease has mental and somatic symptoms, and is the disease making the connecting link between gross structural changes in the nervous system, known as organic diseases, and the intangible functional diseases of the mind. To all appearances epilepsy is the epitome of a mental disease, passing through all its phases in a few seconds or minutes. This cycle may occur hourly or daily. As to whether we may regard epilepsy as due to a toxic, autotoxic, or a hereditarily unstable nervous centre, prompted to abnormal function as the result of a nutritional anomaly, it does not matter for our purpose here.

We are aware that but few diseases have been so much written upon as has epilepsy, but with very few exceptions we find that the majority of the writers have contented themselves with describing only the gross symptoms and effects of epilepsy. Only in rare instances have any accurate data been obtained in regard to the muscular convulsion and the disorder in consciousness resulting from the disease. The reaction time, the condition of muscular tonus, the residual effect of such excessive activity of muscles as seen in the fit, have been but little observed, and then only in a very meagre manner. It is most essential in the study of epilepsy that we should understand just what muscles are first involved in the convulsion and just how severe that convulsion is, as accurately registered by some mechanical contrivance. As scientific investigation of disease has progressed beyond the use of such vague terms as heart failure and brain disease, so we find ourselves daily inquiring about the so-called personal equations and the manner in which the investigator obtained his data and statistics. For illustration I will cite only the instance of examination into the state of the reflexes. We are not at all content to know whether they were simply increased or diminished, but we must know just how much of each was present, as manifested in the rapidity of the response in getting the knee-jerks, what arc was subtended, and how many foot pounds were registered in the foot's forward progression. Again, we must not simply be content to know that this was obtained so and so, but that it followed after many examinations and was fairly uniform under certain conditions. The personal equation must be brought to a minimum; the environment must be carefully stated under which the investigations were made. These two factors, the environment in which the patient lives and the personal equation of the investigator, are the two greatest problems to be controlled and eliminated in the future study of the disease of epilepsy.

Again, upon the mental side of the disease, consciousness and its disturbances have been but little studied. The disastrous results of such disturbances in consciousness have been but little or not at all investigated. One can hardly state the great amount of investigation still to be carried on in the study of the morbid psychology seen in the disorder of consciousness in epilepsy. Not only is the solution of this problem sure to give us a clear knowledge of all the mental disturbances in convulsive disorders in which disorders of consciousness are frequent, but it will throw a flood of light upon all diseased mental states manifested in insanity.

In most instances the data upon the disordered consciousness in epilepsy have been based upon the reports of friends or relatives or incompetent persons to whom the accurate registration of such delicate morbid psychological phenomena should never be intrusted.

On the other hand, there are but few diseases of the nervous system dependent upon disorders in consciousness which present so many tangible symptoms as does the disease of epilepsy. Epilepsy in this respect greatly resembles general paresis, in which disease we frequently find first the motor and then the sensory symptoms predominating; but general paresis is not always constant in its general characteristics, nor does it always bear the same relationship to nervous diseases on the one hand and mental diseases on the other hand as does epilepsy. Before we can make any attempt at solving the problem of what the material substratum of mental diseases really consists, we must study those disease which are most tangible.

To the casual observer—and we must admit that many of the writers upon epilepsy have not been more than this—the disease of epilepsy is considered almost entirely a motor disease. Only within the last few years has it been looked upon as a disease having its main dependence upon the specific energies of the nervous system. In studying epilepsy we should never forget that one of the greatest factors to be considered, and which lies back of all such play of morbid motor and psychic life, is the problem of heredity. It may seem unnecessary for us to speak about such a subject, but the fact is so very frequently overlooked or kept in the background that it will easily stand all the emphasis it may get from frequent repetition. This is doubly difficult of exact measurement because of the protean forms in which morbid heredity may manifest itself. In one instance it may be so gross and tangible that any one may be able to see that the individual epileptic is one belonging distinctly to the defective class, while another epileptic may possess all the tendencies to degeneration which the first may have had, and yet there may be the greatest difficulty in saying exactly what underlies the condition—so elusive are many of the psychical stigmata of degeneration. But notwithstanding that the hereditary element plays such a very important part in epilepsy, we should never lose sight of the abnormal stimuli which may prompt nervous matter to abnormal function, causing in the end an organic change.

The first symptom in epilepsy which should receive our careful attention is that of the aura of epilepsy. At first thought this would seem to be very simple and easy to prove, but when we take into account the fact that the statement of the epileptic about his own symptoms is oftener exaggerated than properly stated, we realize the great danger in accepting any of his statements until they have been carefully weighed and actually observed in so far as it is possible to do so. Many times an epileptic will state that he has an aura or warning of dizziness which, upon close scrutiny, proves to be really a part of the epileptic attack and not an aura properly so called.

The next point of great interest to be investigated is the one in which consciousness is lost or disordered. Late investigation has shown that not infrequently the epileptic will not lose consciousness in a great number of his attacks, but that it remains in a disordinated form, capable of registering some mental acts. Just what degree of consciousness still remains and in what manner it may manifest itself, and just how far this may render the patient responsible for any acts which he may perform at such time, are matters deserving our earnest consideration. Too much time and attention can not be given to this part of the study of epilepsy. The manner of return to normal consciousness after an epileptic seizure is of great psychical interest, as it shows the kind and degree of the disturbance in consciousness which has taken place and its manner of rehabilitation.

Another factor of considerable importance in epilepsy is the after effects of the single seizure upon the mentality of the patient and upon the physical processes of the organism. Such effects can only be measured after very careful study upon many cases of epilepsy. The changes are so gradual and difficult of measurement after a single seizure that it is only after a number of years have passed and many hundreds of attacks have occurred that we are able to measure, in the gross form, the mental failure resulting from the often-repeated disorders of consciousness in epilepsy.

In conclusion, it may be of interest to state that great effort is being made to carry out some of these detailed investigations at the Craig Colony for epileptics. Exhaustive examination is made upon admission; the history is obtained from the family when the patient is unable to give it, and even when he is able to give it any point of obscurity in such history is verified by his friends or relatives. We are all aware that but little can be done in the examination of the insane epileptic to bring about a better knowledge of his disease, but in a great measure it must rest upon data obtained from acute cases in the early stages of the disease.

The one examination made upon admission to the colony is never recorded as final until it is proved by repeated examinations upon different days, and found to be as accurate and complete as painstaking care can make it. Many other examinations and investigations are being carried out upon the epileptics as a whole, the results of which will be published in due time.

THE KNEIPP CURE FROM A SCIENTIFIC POINT OF VIEW.*

By OTTO JUETTNER, A. M., M. D.,
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The name of Sebastian Kneipp, the priest-physician of Woerrishofen, is without a doubt familiar to most of my readers. Of recent years Kneipp has become a much-spoken-of personage, owing to the widespread attention which the people at large have given and are giving to the cause of which he is supposed to be the originator and representative. Physicians have subjected him to much adverse criticism, principally because he is the founder of a system of empirical practice which disregards in a great measure the groundwork and the aims and purposes of scientific medicine and is, therefore, in a way inimical to the interests of the profession. While this is true to a great extent, there is, on the other hand, no doubt that a great deal of injustice has been done to Kneipp by this summary condemnation. It is certainly a fact that the majority of the profession have never attempted to familiarize themselves with Kneipp's teachings and methods. They have condemned the man and his work on general principles, without investigating into either and giving either the benefit of a just, *i. e.*, an intelligent, criticism. It is for this reason that the following lines have been written. To point out to the profession at large the hygienic laws and physiological principles which Kneipp, although unconsciously, applies, and through which he has performed his cures, is certainly in keeping with the truly *eclectic* tendency of modern medicine, which prompts us to gather that which is good and valuable wherever it can be found, and to view all things with that broad spirit of liberality and justice which is characteristic of all scientific criticism.

If by a charlatan we mean a man who, with a view to financial gain, pretends to do what he can not do, Kneipp is certainly not a charlatan. Whatever he has done and written, he has done and written in good faith. A perusal of his book, *Meine Wasserkur*, is sufficient to show that Kneipp is a man of the loftiest philanthropic ideals. He believes firmly everything that he teaches. He has the most implicit confidence in himself and his work, believing the practice of his hydropathic method to be a predestined part of his sacerdotal mission. It is a well-known fact that Kneipp appropriates hardly any part of his princely income for his own use. Everything goes to the support of his church and his children, meaning by the latter the inmates of an immense orphan asylum which he founded and in the welfare of which he takes a truly fatherly interest. Numerous other charitable enterprises, such as a large hospital for incurables, another for cripples, etc., attest to Kneipp's spirit of charity and unselfishness. So much for the man. What about his method?

Kneipp's notions on the ætiology and nature of disease, as indicated in his writings, are a conglomerate of the old humoral pathology and certain original ideas of his own. Disease, according to Kneipp, is at all times a result of disorders of the blood, either in its circulation or in its composition. "The blood-vessel system," says Kneipp, "carrying the red life fluid, permeates the whole organism like a well-constructed system of water pipes. Every part, every organ of the body is supplied and nourished in a manner corresponding to its peculiar nature. Upon this process of nutrition depends the order of things within the body. Too much as well as too little blood, locally or generally, or the addition of elements foreign to the nature of the body will disturb the peace, the harmony, will cause discord, and substitute disease for health." Diseases, therefore, according to Kneipp, are either congestive (inflammatory) in character or blood disorders produced by disturbance of the proportion of the normal constituents of the blood or by the admixture of "blood poisons." Kneipp does not pretend to demonstrate or even explain his pathological notions. He presents them as self-evident and, therefore, true.

His methods of practice and modes of treatment, however arbitrary, empirical, and unsystematic they may be, are to a large extent based upon the teachings of common sense and some generally accepted principles of hygiene, supplemented by some original ideas, the product of his own experience. Abstracting from his materia medica, which consists of teas, decoctions, and infusions of many familiar herbs, some medicated oils, salves, and domestic remedies, Kneipp makes the cure of all curable diseases dependent upon two conditions, to wit:

I. A Natural Mode of Living.—Kneipp seeks to bring the necessities and habits of men back to the simplicity and frugality of former, physically stronger generations. He derides the luxuries and refinements of modern civilization in matters pertaining to the sustenance and care of our bodies. He praises the unsophisticated manners and habits of the man from the country, Nature's own naïve child, whose body is strong and whose mind is unsullied by the *blasé* manner of the ultra-cultured from the large cities. Kneipp never tires of praising the glorious sunshine, the bracing air, the healthful exercise, the rich cow's milk, all of which are associated with life in the country. He insists that a simple and natural way of living will make men stronger and better. He exhorts the present generation to harden their bodies, and thus render them strong, healthy, and capable of resisting the invasions of disease. He looks upon foot-gear as being a necessary evil that should be tolerated when one has to, but done away with whenever there is a chance. Walking barefooted, according to Kneipp, is a splendid way of helping a man to become strong. He tells those who enjoy good health to fortify themselves against taking sick. They should bare their feet, let the air get at them, give tone to the muscles of the feet by brisk exercise, and stimulate excretion and circulation by walking for half an hour or longer upon wet grass, in newly fallen snow, or even in a bath tub, the bottom of which is covered with cold water. He encourages cold douches applied to the extremities. The physiological effects of these methods I shall speak of later on. Kneipp sees in a return to Nature the solution of all social problems. Above all things, he encourages men to do away with all habits of eating and drinking that are not in strict accordance with the requirements of bodily health. He teaches temperance in the use of all stimulants—*i. e.*, coffee, tea, beer, wine, whisky, tobacco, etc. Food should be simple and substantial. While not a vegetarian, Kneipp looks upon vegetable food as being more wholesome and more adapted to the physiological requirements of the human body than animal food. He considers bread the most important article of food. For its preparation the whole grain of wheat or rye should be used (Graham bread, *Schrotbrod*). These general hygienic and dietetic regulations Kneipp applies to the sick man with even more force and consistency than to the well man. His hygiene of the sick-room hinges upon two words—air and light. It would lead us too far to enter into the subject of hygiene and diet as viewed by Kneipp. What I have stated is sufficient to point out the drift of his thoughts. In a general way Kneipp's ideas concerning these subjects coincide with those of the profession of to-day. While he is in some respects a trifle severe and unyielding, there is nothing erratic or objectionable in his hygienic and dietetic teachings.

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* This article was prepared before Kneipp's decease.

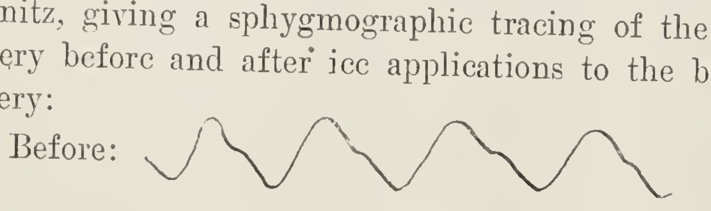
II. Water as a Panacea in the Treatment of all Diseases.—We might as well add *cold* water, for Kneipp has not much use for warm or hot water as a therapeutic agent. He distinctly says: "For the removal of dirt and filth from the surface of the body warm water is good enough, but to expel the dirt and filth of ill health and disease from the organism give me the pure, cold, crystalline blood of the meadows and mountains!" This statement, expressed in Kneipp's characteristic picturesque language, sets forth the claim which made Kneipp famous and with which in the minds of the profession and the laity he will always be associated. In spite of this he is but in a limited sense of the word a hydropath, because his water treatments are restricted to but few forms of application. He rejects some hydrotherapeutic measures highly thought of by Priessnitz, Winternitz, etc., and has some methods distinctively and entirely his own. I will attempt to outline Kneipp's hydropathic method, and give an account of the physiological action of his several modes of water application.

Kneipp recognizes five distinct ways of applying water to the body surface, to wit: The moist pack, the bath, the steam bath, the ablution, and the douche. The principle which underlies the use of these different forms is practically one and the same. In a therapeutic sense, water acts as a carrier of temperature. The douche is the only application of water in which the temperature is not the only factor concerned in producing certain effects, the quantity of the water, the character of the stream, and the force with which water comes into contact with the skin being equally of importance. Since it is principally the *thermic* effects of the water of which the scientific hydropath avails himself in the treatment of disease, let me, for the sake of lucidity and completeness, interpose some considerations about the physiological action of *cold* and *warm* water.

The action of water of variable degrees of temperature primarily affects the nerves of the skin, and through them the blood-vessels and lymphatics. The greater the contrast between the temperature of the water and the normal body heat, the more marked will necessarily be the effect or the irritation produced. Thus, *extreme* cold or heat, if applied to the skin for a few moments, will increase the irritability of the sensory cutaneous nerves. Subjectively pain might be present, objectively the sense of touch is intensified—*i. e.*, the part which has been exposed to extreme cold or heat is *hyperæsthetic.* If the application of an extreme degree of cold or heat is prolonged, sensibility becomes lessened until a condition of complete functional exhaustion of the sensory nerves of the skin is produced—*i. e.*, the part becomes *anæsthetic.* What degree of temperature is required, and how long such temperature must act upon the skin to produce stimulation or depression depends entirely upon individual susceptibility. Another factor which determines the intensity of the reaction is the suddenness with which an extreme temperature acts upon the "thermic sense" of the cutaneous surface. If the latter becomes habituated to a certain high or low temperature by a gradual increase or decrease of temperature, the reaction, of course, will be slight. Since, however, as Winternitz remarks, the subjective state of the nervous system (humor, state of feeling, *Stimmung, Gemuethszustand*) is largely dependent upon the impulses carried by the peripheral nerves to the brain and spinal cord, it is plain that the degree of stimulation or depression of the peripheral nerves can affect the central nervous system. We can stimulate or depress the whole organism through the peripheral nerves. It is possible, therefore, to counteract through the nerves of the skin conditions of depression or exhaustion affecting the nervous system generally.

In this connection it is proper to mention the effect which an indifferent water application (*i. e.*, water of a temperature near the normal body heat) will have upon the nerves of the skin. The physiological experiments of Heimann and Krebs have conclusively shown that water is absorbed through the skin—*e. g.*, during a long-continued bath. As a result of such absorption the peripheral nerve endings appear slightly œdematous. Molecular motion within these nerve filaments must necessarily be impeded or rendered less active by the presence of the aqueous elements, and, as a result, these nerve endings will respond imperfectly and less promptly to excitation. In this way the *sedative* effect of a full bath can be explained.

The most intense and lasting thermic effects, however, are produced upon the circulation. It is principally by a proper understanding of the action of temperature upon the blood-vessels that we can account for the efficacy and explain the therapeutic indications of Kneipp's cold-water applications. These effects upon the circulation are brought about by way of reflex action. The thermic impressions received by the sensory cutaneous nerve endings are reflected to nerve centres situated in the brain, the cord, and in the peripheral nerve ganglia. The stimulus is transmitted to the vasomotor nerves and through the latter to the circular (middle) muscular coat of the arteries. In addition to this action the thermic stimulus will necessarily affect the contractile tissue in the skin itself. Thus we have as a result of cold applied to the skin a contraction of the arteries in and beneath the skin—*i. e.*, an acute anæmia. The arterial blood is forced into the neighboring vessels, which, as a result, are dilated. The peripheral anæmia continues until the unstriped muscular fibres of the arterial walls become relaxed again, which happens when the primary thermic stimulus ceases to act, or when a stimulus of the opposite character is substituted. The blood rebounds with increased vigor and quantity into the vessels of the skin. This is what hydropaths call *reaction*. The skin again becomes hyperæmic, warm, and red. It stands to reason that the reaction can be indefinitely delayed by causing the primary thermic stimulus to act upon the skin for an indefinite length of time. The decided effects of cold upon the circulation are well shown by an illustration from Winternitz, giving a sphygmographic tracing of the radial artery before and after ice applications to the brachial artery:



The acute anæmia of the skin, as has been indicated, is coincident with a collateral hyperæmia of the surrounding tissues caused by the influx of blood from the contracted cutaneous vessels. The larger the area is which is exposed to the action of cold, the greater will be the quantity of blood forced into the contiguous structures, and the more extensive will be the territory affected by this disturbance of the circulation. Thus it is seen that a thermic stimulus can be made to act upon parts that are in reality at a relative distance from the place where the stimulus is applied. It stands to reason that most intense and far-reaching effects upon the general circulation can be produced by acting upon the circulation of the whole body surface. The therapeutic value of these circulatory changes is indicated by Winternitz, who expresses himself thus: "This process of alternately emptying and overfilling blood-vessels is capable of temporarily depleting congested organs, of in this way restoring their normal tone, of stimulating tissue change in these organs by accelerating and briskly altering the blood current, and by thus furnishing new material for the reestablishment and sustenance of the functional activity of these organs. A still more important effect of this changing current is the excretion and washing away of the morbid products which, as the results of decomposition and retrograde metamorphosis, have accumulated in the congested parts."

Let me briefly refer to some physiological and clinical experiments by which the effects of water applications upon the circulation have been strikingly demonstrated. Schüller trephined rabbits, and through the opening made exposed a circumscribed area of the meninges. Whenever a cold-water application was made to the abdomen of the animal dilatation of the vessels of the pia mater was distinctly noticeable. A warm-water application to the abdomen was followed by contraction of the meningeal vessels. Immersion of the animal in cold water was promptly followed by wide dilatation of the meningeal vessels, immersion in hot water caused forcible contraction. What a valuable therapeutic indication there is in these observations for the treatment of all conditions in which a depletion of the encephalic circulation is desirable—*e. g.*, apoplexy! Winternitz showed that during a cold sitz bath the circumference of the arm increased; in a hot sitz bath it decreased.

It would lead us too far away from our subject to enter any more deeply into the physiology of water applications. Enough has been said to show the deep and lasting effects which may be produced upon the vital functions of the organism (circulation, respiration, excretion, nutrition) by the scientific use of water.

As I have mentioned before, Kneipp employs five distinct forms of water applications. Four of these—namely, the moist pack, the bath, the steam bath, and the ablution—were in use long before Kneipp's time. It was Priessnitz particularly who systematized these various methods and determined their technique. The douche as a therapeutic measure is Kneipp's own idea. His suggestions as to the best way of hardening the body and rendering it insusceptible to disease (walking barefooted, walking in newly fallen snow, etc.) are based upon the old German adage:

> "Recht kühlen Kopf und warmen Fuss
> Gesunder Mensch stets haben muss."

Cold applied to the feet will bring about a powerful reaction, which will draw an immense amount of blood to the lower extremities. In this way congestions in the upper part of the body are counteracted and the feet remain warm. Among the therapeutic applications of water used by Kneipp the best and most effective is unquestionably

The moist pack, which, in justice to its originator, ought to be known as the Priessnitz pack. It consists of a *cold* wet cloth over which dry pieces of woolen material are placed. The size and the manner of packing will, of course, depend upon the part of the body to which it is applied. If the whole body is packed, from the feet up to the neck, a cold wet sheet, in which the patient is enveloped, answers best. The outward covering consists of a number of woolen blankets. The action of the moist pack is as follows: The cold moisture of the sheet causes contraction of the cutaneous vessels. The blood is forced into the vessels of the contiguous structures, causing an acute hyperæmia. Soon, however, the reaction sets in, forcing the blood back into the cutaneous vessels, which, as a result, dilate. By this time the normal temperature of the body, aided by the heat-retaining dry woolen covering, has warmed up the moisture of the linen sheet. The pack keeps the skin hot, and in this way intensifies and continues the reaction. An enormous amount of blood is drawn to the surface, leaving the internal organs partially depleted. The therapeutic value of the moist pack will readily be seen. Every physician knows its value in cases of sore throat, tonsillitis, etc., in which the pack is applied to the neck. If applied to both lower extremities, a relative anæmia of the trunk and head is the result. If applied to the abdomen, partial depletion of the abdominal vessels, especially the sluggish portal system, will follow. If any limited part of the body surface is packed, the result will invariably be an anæmia of the part or parts whence the blood supply of the packed area comes. This form of treatment, by which blood is taken away from one part and drawn to a distant part, is what hydropaths call "derivating method" (*ableitendes Verfahren*). It accomplishes in congestions and inflammatory conditions what venesection aims at, without, however, weakening the organism by loss of blood. As a result of the anæmia produced, the nutrition of the depleted part or organ will necessarily be affected. Circulation is eventually stimulated, tissue change accelerated, absorption promoted. Thus we may look upon the Priessnitz pack as an alterative of great virtue. The duration of a pack depends upon the peculiarities of each case, and varies from one to three hours. Kneipp relieves all congestive conditions by means of this pack. It has, as will be readily seen, a wide range of applicability. It will well repay any physician to familiarize himself with its technique and action. It is applicable in all cases of inflammation, where its powerful effect upon the circulation makes it a true antiphlogistic. Congestive headache, insomnia, abdominal plethora, hæmoptysis, and a host of other conditions can be treated according to the "derivating" method with a great deal of benefit. Cases, of course, should be individualized. The physician should employ the method in keeping with its physiological effect. From this point of view Kneipp's way of using it is open to some criticism. The indiscriminate employment of so powerful a reagent is not without danger. For obvious reasons, organic disease of the heart and degenerative changes in the arterial walls (luetic, calcareous, etc.) are contraindications. The theory and practice of the cold, moist pack prove conclusively that for the successful employment of hydropathic methods a good physiological knowledge and an exact diagnosis are indispensably necessary. Nothing could be more preposterous than the claim made by some charlatans that for the practice of hydropathy no preliminary medical education is necessary. Another form of water application used by Kneipp is

The Bath.—Kneipp lays special stress upon the *cold* bath. Warm water, according to his idea, is good enough to start the treatment on a weak, irritable patient, and by gradually lowering the temperature make the patient tolerant to cold water. He also uses hot and warm water to give "medicated" baths. He adds hay, oats, or other vegetable products to boiling water, allows the water to stand until the right degree of warmth has been reached, and uses it for a variety of purposes. He attributes remarkable curative properties to these "medicated" baths, and gives explicit therapeutic directions for their use. There is no doubt that these baths impress the popular mind most favorably and can be relied upon to produce a profound moral effect. This is as much as can be said in their favor. In regard to his "medicated" baths and a good many other subjects, Kneipp betrays his lack of scientific training. He is an empiric and can not logically distinguish between the *post hoc* and the *propter hoc.* So far as the simple warm bath is concerned, Kneipp frequently employs it as a means of intensifying the reaction following the cold-water bath. He causes dilatation of the cutaneous vessels by giving a warm bath, and then suddenly contracts the vessels by a cold bath. A favorite method of his is to give alternately three warm baths of ten minutes each, and three cold baths, each one lasting one minute. He begins with a warm bath, follows it up with a cold bath, and so on until six baths have been taken, the last one being a cold bath. This prolonged procedure is Kneipp's famous "tonic" bath. Its physiological effect is principally to stimulate circulation and, through repeated powerful reaction, to exercise and give tone to the muscular coat of the arteries by causing the vessels to alternately dilate and contract. Coincident with this effect is the impetus given to the reactive power (excretion, etc.) of the skin.

Kneipp's reasoning in regard to these subjects is based upon the assumption that reactive power is never absent and can at all times be restored. He takes it for granted that a patient's skin and circulatory system will necessarily respond. These premises not infrequently lead to erroneous conclusions, because they can not be unconditionally granted in all cases. In some patients reaction * will not follow, or will be slow and imperfect. In cases in which the elasticity and activity of the skin and the tone of the arterial system are much impaired, instead of reaction internal congestions and even inflammatory conditions must be the invariable result. Hence we may say that discrimination in the use of cold, especially according to Kneipp's heroic method, is the *conditio sine qua non* of hydropathic treatment. I again repeat and emphasize, that without a thorough knowledge of physiology and pathology the practice of hydrotherapy is unjustifiable. Kneipp, strangely enough, discountenances the employment of artificial means to bring about reaction. Massage, which should be and is the indispensable helpmate of hydrotherapeutics, finds no place in Kneipp's armamentarium. Another form of water application used by Kneipp is

The Vapor.—In a therapeutic sense Kneipp does not attribute much value to steam. He dislikes the general steam bath (Turkish bath). He recommends the steaming of individual parts of the body to promote local excretion and render the part soft and tractable. Steam, as he says, only prepares the part for the water treatment proper. In a general way his notions do not differ from the views ordinarily entertained by the profession in regard to the uses of vapor. Another form of water application employed by Kneipp is

The Cold Ablution.—Its uses, effects, and contraindications are practically the same as those of baths. The only difference is that in an ablution the water is brought into contact with the skin by means of a rough towel immersed in it. If the patient is bedfast or very weak, Kneipp substitutes the ablution for the bath. In febrile diseases (typhoid fever, etc.) the cold ablution is the antipyretic and stimulant *par excellence.* Kneipp was an advocate of the cold ablution in these cases long before Brand, of Stettin, published his classical statistics on the hydropathic treatment of typhoid fever. Last, but not least, we come to the consideration of Kneipp's typical water application—namely,

The Douche.—The water is thrown against, or falls upon the skin of a certain part. Kneipp's apparatus for douching is very primitive, consisting of an ordinary sprinkling can which has a set of nozzles to furnish different kinds of streams. In a case which is capable of reacting, Kneipp's douche is of great value. The cutaneous anæmia, produced partly by the cold water and partly by the force with which the water falls upon the skin, is well marked. The force of the falling water acts by mechanically pressing upon the tissues of the skin *en masse,* and thus affecting them after the manner of massage. The force of the douche is, of course, in proportion to the distance from which the water falls, and is also dependent upon the size of the stream. The cold douche is an alterative of great power. Its effects are prompt and profound. The reaction following it is, as a rule, very intense. Kneipp combines the douche in various ways with the other forms of water applications, the object being *to intensify reaction,* which, after all, is the object of all hydrotherapeutic methods. This object, in so far as it is the physiological purpose of hydrotherapy, is strictly scientific, and therefore legitimate. It is only the way in which the accomplishment of this purpose is sought which is at times open to criticism. Like all empirics, Kneipp does not know at all times how to adapt the means to the end. His method of giving douches is somewhat indiscriminate, and hence not infrequently objectionable. It can not be gainsaid, however, that in suitable cases Kneipp's douches are of great service. They restore muscular tone and elasticity to a remarkable extent and stimulate local circulation and tissue change. Let me add that massage, in spite of Kneipp's protest, is, in conjunction with the douche, an excellent auxiliary measure.

In conclusion let me ask: What can be said of Kneipp and his methods from a strictly scientific point of view? Has he established or taught anything new or original? Nothing would be more erroneous than to assume that Kneipp or Priessnitz or Schroth, or any other exponent of common sense applied to the *art* of healing, has added one iota to the *science* of medicine. Their success simply proves that after all it is the simple fundamental laws of hygiene and physiology that contain the principles of the art of healing. The *vis medicatrix naturæ* is willing and, *cæteris paribus,* able to do her work whenever we give her a chance. Above all things place every patient in the surroundings which the living organism by reason of its construction and destination requires. No plant can live without *light* and *air.* How can we expect the highly organized body of man to develop and thrive without light and without air? It is well known that the lower animals in captivity degenerate physically. They need *exercise* to keep them strong and healthy. How can you expect man to retain his mental and physical buoyancy if you allow the perverted mode of living of to-day to make a machine out of him? Every member of the brute creation craves for the food adapted to the physiological requirements of its organism; it instinctively respects the science of dietetics. Why should man be allowed to disregard the voice of Nature and *eat* and *drink* as his ultra-refined or vitiated appetite prompts him? Hygiene and dietetics, practically applied, are, indeed, the preventers and healers of at least one half of the diseases to which human flesh is heir. To act according to hygienic and dietetic laws is what I designated as "common sense applied to the *art* of healing." It is the foundation upon which the magnificent superstructure of the science of medicine is erected.

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* Reaction is, as I have previously stated, the forcible return to normal conditions of blood-vessels which takes place when the primary effect of a thermic stimulus passes off.

The study of Nature's own plans and aims should be the prevailing spirit of all pathological investigations. We should learn to look upon disease as being a reparative effort. We must try to appreciate fever as our greatest helpmate in the treatment of disease. We must not interfere with the process of rapid oxidation, but rather try to regulate and make it subservient to our purposes. Nature never wishes to destroy, but always to build up. It is only when the hostile intruder, causing the disturbance, is stronger than the resisting power of the organism, that local destruction or general dissolution takes place. Even then it is only the enforcement of one of Nature's great laws: the survival of the fittest. This strictly biological view of disease is a most beautiful upholding of the science of bacteriology. We must try to understand the nature of overnutrition (congestion, inflammation) and the means of equalizing the circulation in a strictly physiological way. We must, in this connection, learn to appreciate the value of the thermic effects of water (hydrotherapy) aided by mechanical means (massage). By so doing we consecrate the empirical pioneer work of such men as Schroth, Priessnitz, and Kneipp to the cause of scientific medicine in the interests of human knowledge and for the welfare of our patients.

Therapeutical Notes.

Dermatol and its Internal Administration.—Dermatol, says the *Lancet* for August 14th, is, as is now well known, a basic oxide of bismuth and has been employed with considerable success as a substitute for iodoform in the treatment of wounds, having both the desiccating power of bismuth and the hæmostatic and astringent characteristics of gallic acid. Its employment as a drug for internal administration up to the present time has not been at all general, though Colasanti and Dutto have prescribed it with advantage in various cases of intestinal catarrh, and Werther has found it useful in chronic intestinal catarrh. Dr. Perlmutter has recently published a paper in the *Münchener medicinische Wochenschrift* on its employment in gastric ulcer and diarrhœa, his observations being made on an extended series of cases and being inspired by Professor Moritz, who recommended it to his notice. In diarrhœa in phthisical subjects and in acute and chronic enteritis he found it most valuable, all cases of this kind benefiting by its use, and the result being by no means only of a transient character. The drug was given in doses of from eight to thirty grains, in water, twice a day. It is not poisonous, and produces no by-effects except a tendency to constipation, which can be readily combated by means of glycerin enemata. In gastric ulcer, too, it was very useful, especially in acute cases where patients could be kept at rest and properly dieted and made to lie on the affected side after taking the dermatol, so that it might come into contact with the lesion itself. Of course, when bismuth is being given, the stools will be dark, and care must be taken not to mistake them for those colored by blood.

Suppositories of Sodium Salicylate.—Lemanski (*Semaine médicale; Indian Lancet*, July 16, 1897) recommends the following suppository:

℞ Sodium salicylate	15 grains;
Cacao butter	a sufficiency.

M. Five or six suppositories are to be used daily.

Thyreoidin as a Galactagogue.—Stawell (*Intercolonial Medical Journal; Therapeutische Wochenschrift*, August 8, 1897), having given from three to five tablets of thyreoidin (each equivalent to nine tenths of a grain of the dried thyreoid gland) to each one of nine nursing women, observed that in seven of them the flow of milk was increased and its quality improved.

An Ointment for Psoriasis.—The *Progrès médical* for August 21st attributes the following formula to Richter:

℞ Ichthyol, Salicylic acid, Pyrogallic acid,	each	3 parts;
Olive oil, Lanolin,	each	10 "

M.

An Antiseptic Mouth Wash.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 22d gives the following formula:

℞ Carbolic acid	3 grains;
Benzoic acid	90 "
Tincture of eucalyptus	5 drachms;
Water	3½ pints.

M.

The Treatment of After-pains.—Audebert (*Gazette hebdomadaire de médecine et de chirurgie*, 1897, No. 44; *Journal des praticiens*, August 28, 1897) remarks that after-pains are generally due to some mechanical cause, such as repletion of the bladder or rectum and the presence of placental fragments, clots, or the like, in the uterus. The bladder should be emptied, with the catheter if necessary, and the rectum unloaded by means of an enema, after which fifteen drops of laudanum and an ounce and a half of boiled water should be thrown into the rectum and retained. The following may be used internally:

℞ Antipyrine	45 grains;
Syrup of potassium bromide	1 ounce;
Orange-leaf water	2 ounces.

M. S.: A tablespoonful every three hours.

Or the following may be prescribed:

℞ Fluid extract of viburnum prunifolium, Fluid extract of hydrastis,	each	½ ounce.

M. S.: Twenty drops, in a warm drink, every two hours

Uterine expression should be practised in the intervals between the pains, and hot vaginal injections administered. Intra-uterine injections are to be regarded as a last resort, to be employed with great care and the avoidance of much pressure.

Anæsin, a New Local Anæsthetic.—Vámossy (*Ungarische medicinische Presse*, 1897, No. 21; *Centralblatt für Chirurgie*, August 14, 1897) describes anæsin as a watery solution of acetonic acid trichloride, or acetone chloroform. He has found that a one-per-cent. solution has the anæsthetic power of a two- or two-and-a-half per-cent. solution of cocaine, that it is sterile, that it does not spoil on standing, that it does not irritate the part to which it is applied, and that it is not poisonous.

Potassium Iodide in the Treatment of Chancroid.—Lanz (*Deutsche medicinische Wochenschrift*, 1896, No. 17; *Annales des maladies des organes génito-urinaires*, August, 1897) reports a number of typical cases of soft chancre that had resisted all the ordinary topical applications, but yielded rapidly to the internal use of potassium iodide.

Phosphorus in the Treatment of Rickets.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 26th gives the following as Kassowicz's formula:

℞ Phosphorus	0.15 of a grain;
Dissolve in:	
Oil of sweet almonds	2½ drachms;
Add, to make an emulsion:	
Powdered acacia, Syrup, each	75 grains;
Distilled water	2⅔ ounces.

From one to four teaspoonfuls, according to the child's age, may be given daily.

A Spray for Scarlatinal Angina.—The *Revue médicale* for September 1st attributes the following formula to H. M. McClanahan:

℞ Oxygenated water	1 ounce;
Sodium bicarbonate	18 grains;
Boiled distilled water	2 ounces.

M. S.: To be used every two hours.

Airol Paste as an Occlusive Dressing.—Bruns (*Beiträge zur klinische Chirurgie*, xviii, 2; *Centralblatt für Gynäkologie*, August 28, 1897) has for the last six months used a paste having the following composition:

℞ Airol, Mucilage of acacia, Glycerin, each	1 part;
White bole	2 parts.

M.

It is spread rather thick over sutured wounds and rubbed in so as to close all the suture holes. Under its use Bruns has seen no suture abscesses.

A Ferruginous Saline Purgative.—In his new *Text-book of Diseases of Women*, Dr. Charles B. Penrose, of Philadelphia, recommends the following for women with catarrh of the cervix uteri:

℞ Iron sulphate	12 grains;
Magnesium sulphate	1½ ounce;
Sodium chloride	12 grains;
Dilute sulphuric acid	1½ drachm;
Infusion of quassia, enough to make	6 ounces.

M. S.: A tablespoonful an hour before meals.

Sodium Oleate as a Cholagogue.—Blum (*Bulletin de thérapeutique*, August 8, 1897; *Lyon médical*, August 29, 1897) recommends pills each containing a little less than four grains, of which from two to five are to be taken daily.

Liquor Ferri Vitellinati.—According to the *Zeitschrift für Krankenpflege* for August, this is a compound containing 0.4 per cent. of iron, intended as a substitute for cod-liver oil.

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ARTIFICIAL HYPERÆMIA AS A THERAPEUTICAL AGENT.

It seems that Dr. Bier, of Kiel, has been experimenting with induced hyperæmia, active or passive, as a therapeutical agent since the year 1891, and that he has employed it in about four hundred cases of disease (*Münchener medicinische Wochenschrift*, 1897, No. 32; *Wiener klinische Wochenschrift*, August 26, 1897). Passive hyperæmia, which appears to be the more efficacious form, is brought about by encircling a limb above the affected part with a rubber bandage. For some purposes, as in the treatment of gonorrhœal rheumatism, the stasis has to be pronounced. In one case the difference between the circumference of a sound elbow and that of the elbow of the other side, subjected to static hyperæmia, amounted to about four inches.

The following were among the results observed: Gummata and ulcers were evidently made much worse. In two cases sarcomata grew very luxuriantly. In gonorrhœal rheumatism, of which eleven cases were treated, the results were decidedly favorable, although the treatment was employed only in cases that had resisted the usual remedies or were from the outset of the form that is prone to lead to stiffness and ankylosis. For example, a young man had gonorrhœal inflammation of the knee that had lasted for fourteen days. The joint was swollen so as to be spindle-shaped, the skin was œdematous and slimy, and the joint was very tender, but there was no effusion. Static hyperæmia was induced, and the next morning, although the constriction had been comparatively slight, the joint was excessively swollen, bluish red, hot, and covered with blebs; in spite of all this, however, the patient was much pleased, for the pain had almost wholly disappeared. After a few days movements of the joint were carefully executed, in a week the swelling rapidly subsided, and in a short time the normal mobility of the joint was reestablished. As a rule, in cases of gonorrhœal rheumatism, induced passive hyperæmia rapidly did away with the pain and inflammation, so that movements could be practised early, and thus ankylosis be prevented. In acute articular rheumatism the result was often good, but the treatment was particularly serviceable in chronic articular rheumatism. In a case of true gout no effect upon the inflamed joint was observed.

Besides static hyperæmia, Bier induced decided hyperæmia by means of hot air, air of a temperature of from 158° to 212° F. In cases of tuberculous joint disease the results of hyperæmia thus induced were not good. On the other hand, in severe cases of tuberculous disease of the skin and of the sheaths of tendons, cases unsuitable for operative interference, a rapid and perfect cure was brought about. In a few cases hyperæmia was induced by means of hot water, and by such a hyperæmia a severe lupus was much improved, but the treatment had to be discontinued on account of the rapid progress of general tuberculosis. Lastly, Bier employed dry cupping for the production of static hyperæmia, and this proved strikingly beneficial in cases of lupus. The utility of such treatment is limited in practice, however, he remarks, for cups will not cover large surfaces.

Many theories have been entertained as to the *modus operandi* of blood stasis as a curative agent. Perhaps, says Bier, the most plausible is the one propounded by Hamburger—namely, that blood highly charged with carbonic acid, on account of its heightened alkalescence, is more destructive of bacteria than arterial blood. It is thus that Hamburger explains the immunity of lungs in a state of stasis, also the action of artificial venous hyperæmia on tuberculosis.

THE ÆTIOLOGY OF MOUNTAIN SICKNESS.

It is probable that we have yet much to learn concerning the causes of the distress that often attacks mountain-climbers, known as mountain sickness or mountain fever, and characterized by dyspnœa, palpitation of the heart, and nausea. At a meeting of the French Association for the Advancement of the Sciences held in August, M. Foveau de Courmelles, of Paris (*Gazette hebdomadaire de médecine et de chirurgie*, August 29th), broached the theory that ozone was the cause of the trouble. Recent researches, he said, had shown that ozone was found more abundant the higher one ascended. Moreover, by various experiments on himself, on other persons, and on animals, as well as by epidemiological researches, he had demonstrated that under the action of an excess of ozone it was impossible for the blood to carry on its vital functions, and especially to play its part in respiration. The sickness of persons who made ascents, he said, whether by climbing mountains or in balloons, depended on this "condensed oxygen." He suggested that ozone might be converted into ordinary oxygen by means of ammonia, but it does not appear from the report that the details of the employment of that agent in ascents were unfolded.

M. Foveau de Courmelles's theory was apparently not satisfactory to the few who are reported to have taken part in the discussion. M. Cénas thought that the three chief causes of mountain sickness were overstrain of the heart in persons unaccustomed to exertion, lack of food, and fear of not reaching the summit. Theories based on considerations as to the composition and pressure of the atmosphere, he said, dealt with only a secondary point of the question, which as a whole was very complex. Those theories did not explain the disappearance of the sickness as soon as the top of the mountain was reached or its occurrence at insignificant altitudes.

M. Guinard, too, believed that the causes of mountain sickness were many, and that alteration of atmospheric pressure and oxygen tension, although one of the important factors in its production, was by no means the only one. The influence of muscular fatigue, overtasking of the heart, and lack of training, as M. Cénas had said, were often essential elements; this was in accord with what Chauveau and Kaufmann had found to be true of the state of the circulation in muscles that were being exerted and of the influence of muscular exertion on the heart and on the general circulation. But, he concluded, while detracting from the somewhat excessive importance accorded by physiologists to insufficient oxygenation, we should guard against too great exclusiveness in adopting an interpretation of the phenomena.

INJECTIONS OF ZINC CHLORIDE FOR THE RADICAL CURE OF HERNIA.

The *Centralblatt für Chirurgie* for August 28th gives a condensed account of the experience of M. Lannelongue and M. Demars in the radical cure of hernia by means of injections of zinc chloride. M. Lannelongue, with whom the procedure seems to have originated, described it in a communication to the Académie de la science, and a report of it is given in the *Comptes rendus* of that body for 1897, No. 17. It appears that about six months before this meeting M. Lannelongue had shown before the Academy of Medicine five patients on whom the treatment had been tried, and before describing it formally he had allowed this length of time to elapse, in order that he might be sure of the permanence of the results. During that time he has operated in a number of other cases, upon which he promises to report shortly in a special publication, and thus far the results have fulfilled his expectations.

The operation is done at one sitting of but a few minutes' duration. After the hernia has been reduced, an assistant presses with his finger on the internal inguinal ring, to prevent the solution from running into the peritoneal cavity in case it should accidentally be thrown into the sac. Three injections of ten drops each of a ten-per-cent. solution of zinc chloride are given at the situation of the internal pillar, reaching to the anterior surface of the pubic bone, and three other injections of the same sort at the site of the external pillar. The needle is made to pass behind and to the outer side of the spermatic cord, which must be avoided. On withdrawing the needle, care should be taken that none of the solution escapes beneath the skin, for such an escape would cause superficial burning. In the case of adults—it seems that the procedure is intended particularly for children and persons under twenty years old—the number of injections has to be a little greater.

M. Demars, who published his communication on the subject in the *Bulletin médical* for 1897, No. 18, has operated in six cases, three in boys and three in girls, the ages of the patients varying from five to sixteen years. In two cases the hernia was congenital. The results were good. Generally a rather painful induration formed after the operation, but it gradually disappeared. In one case, after healing had taken place, muscular action gave rise to a fresh hernia, but it is noted that it was not formed at the site of the old one, but more to the anterior side of the inguinal canal. On this account, M. Demars recommends carrying the injections somewhat farther outward, but M. Lannelongue thinks that that would involve the risk of wounding the crural vein.

Dr. A. Henry, of Breslau, the author of the *Centralblatt's* abstract, remarks that this procedure seems somewhat minute and not to be undertaken without scruple, also that too short a time has elapsed to show how enduring the results are going to be.

MINOR PARAGRAPHS.

MOON BLINDNESS.

Bull (*Norsk Magazin for Lägevidenskaben*, 1896, No. 6; *Deutsche Medizinal-Zeitung*, August 19, 1897) relates the case of a sailor, previously healthy, who, together with two comrades, had to sleep all night on the ship's deck, off the coast of Honduras, in bright moonlight. When they awoke, early in the morning, not one of them could distinguish the ship's yards, and they could hardly make out her bridge. This state of things continued for two months without interruption, when the man who was the subject of Bull's observation lost sight of the two other sailors. On his return to Europe, the man consulted a physician in Kronstadt, who prescribed cod-liver oil. He thought his vision improved a little after that. It was not until seven years later that Bull saw him. There was then slight conjunctivitis, and the whole visible surface of each lens showed numerous little points that were bluish white by reflected light. Besides, there were fine stripes radiating from the centre of the lens. Bull is convinced that the impairment of vision, to four eighteenths, was occasioned by the moonlight.

THE YELLOW FEVER IN THE SOUTHWEST.

We believe there is no cause for alarm concerning the scattered outbreaks of yellow fever in Mississippi and Louisiana, and certainly thus far there is no justification for attempting to restrict intercourse with the towns in which the cases have occurred. Competent medical officers of the Marine-Hospital Service have been ordered to the regions affected, and the community may rely on their taking all necessary precautions to limit the spread of the disease. Of course, the country will expect unusual vigilance to be displayed in the inspection of vessels bound from some ports in close connection with the region in which the fever has occurred, and inland lines of communication, too, will have to be looked after carefully, but there need be no quarantine of the "shotgun" description.

THE TREATMENT OF NOMA.

Three cases of this rare disease have been observed by Weill (*Médecine moderne*, 1897, No. 27; *Centralblatt für Chirurgie*, August 14, 1897). Two of them ended fatally. In the third case recovery followed free incision. A salivary fistula formed, but subsequently this was cured by means of a plastic operation. All the patients were children between four and six years old.

PULMONARY EMBOLISM FROM A MERCURIAL INJECTION.

Schulze (*Archiv für Dermatologie und Syphilis*, xxxix, 2; *Centralblatt für Chirurgie*, August 21, 1897) reports a case in which an injection of mercury salicylate in paraffin was followed by high fever and great dyspnœa, but no pulmonary dullness. The whole attack was soon over, and no other disturbances occurred.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 14, 1897:

DISEASES.	Week ending Sept. 7.		Week ending Sept. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	29	6	25	6
Scarlet fever	74	4	74	5
Cerebro-spinal meningitis	1	0	0	0
Measles	41	4	37	3
Diphtheria	111	23	130	16
Croup	0	2	7	0
Tuberculosis	126	102	209	112

Marine-Hospital Service Health Reports.—The following statistics concerning yellow fever, cholera, and small-pox were received in the office of the U. S. Marine-Hospital Service during the week ending September 11, 1897:

Small-pox—United States

Birmingham, Ala.	Sept. 1–6	11 cases.

Small-pox—Foreign.

Bombay, India	Aug. 3–10	1 death.
Para, Brazil	Aug. 4–21	2 deaths.

Yellow Fever—United States.

New Orleans, La., Sept. 10.—Up to this date there have been one death and twelve cases reported as suspicious by the board of health.

Ocean Springs, Miss., Sept. 10.—There have been three deaths and two cases of yellow fever.

Perkinston, Sept. 10.—One case reported, contracted at Ocean Springs.

Pascagoula, Miss., Sept. 10.—One case reported; origin not clear.

Yellow Fever—Foreign

Para, Brazil	Aug. 14–21	8 deaths

Cholera.

Bombay, India	Aug. 3–10	173 deaths.
Calcutta, India	July 24–31	9 “
Osaka and Hiogo, Japan	Aug. 1–14	5 “

The Medical Society of the Missouri Valley.—The tenth annual meeting was to be held in Council Bluffs, Iowa, on September 16th, under the presidency of Dr. H. B. Lowry, of Lincoln, Nebraska. The programme included the following papers: Gastroptosis and Enteroptosis, by Dr. B. B. Davis, of Omaha, Nebraska; Piperazine in Rheumatism, by Dr. Carl Engel, of Aspinwall, Iowa; Diphtheria, by Dr. E. C. Rankin, of McLouth, Kansas; A Case of Inveterate Clubfoot, by Dr. W. Ross Martin, of Omaha, Nebraska; School Hygiene, by Dr. S. R. Towne, of Omaha; Notes on Clinical Surgery, by Dr. J. E. Summers, Jr., of Omaha; Professional Degeneracy, by Dr. F. S. Thomas, of Council Bluffs, Iowa; Lessons from some Interesting Laparotomies, by Dr. W. O. Henry, of Omaha; The Injection Method of Treating Internal Hæmorrhoids, by Dr. R. D. Mason, of Missouri Valley, Iowa; Renal Tuberculosis, by Dr. Charles C. Allison, of Omaha; Dementia in its Clinical Aspect, by Dr. Mary Strong, of Omaha; Experiments in the Disinfection of the Lid Borders and the Conjunctival Sac, by Dr. H. Gifford, of Omaha; The Early Signs of Typhoid Fever, by Dr. W. O. Bridges, of Omaha; Septic Infection following Incomplete Abortion, with a History of a few Cases, by Dr. W. R. Talboy, of New Castle, Nebraska; The Relation of the Medical Profession to Popular Medical Fads, by Dr. George H. Simmons, of Lincoln, Nebraska; A Report of a Case of Compound Intra-uterine Fracture, by Dr. A. D. Wilkinson, of Lincoln, Nebraska; The Clinical Examination of Human Milk, by Dr. H. M. McClanahan, of Omaha; The After-treatment in Surgical Operations, by Dr. Carl H. Anderson, of Chicago; Necrosis of the Thyreoid Cartilage, by Dr. F. W. Dean, of Council Bluffs, Iowa; Skiagraphs of Arterial Sclerosis, by Dr. J. P. Lord, of Omaha; and Ulcus Rotundum, by Dr. A. F. Jonas, of Omaha.

The Buffalo Academy of Medicine.—At the next meeting of the Section in Pathology, on Tuesday, the 21st inst., the following papers will be read: Some Observations on the Physiology of the Stomach, with a Report of an X-Ray Exhibition, by Dr. A. L. Benedict; and Abnormal Cell Development in Plants and Animals, a Study in Comparative Pathology, by Miss Mary Forster, of Newnham College, England.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 5 to September 11, 1897:*

HEYL, ASHTON B., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about September 15th.

KENNEDY, JAMES M., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Missoula, Montana, and is ordered to Fort Washington, Maryland, for duty at that post.

POWELL, JUNIUS L., Captain and Assistant Surgeon, is ordered to report to the president of the examining board, Denver, Colorado, for examination as to his fitness for promotion.

SHAW, HENRY A., Captain and Assistant Surgeon. The leave of absence granted him is extended one month.

A board of officers to consist of CORSON, JOSEPH K., Major and Surgeon; GIRARD, ALFRED C., Major and Surgeon; and MUNN, CURTIS E. M., Major and Surgeon, is appointed to meet at Denver, Colorado, on Wednesday, September 22d, at 10 o'clock A. M., for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending September 11, 1897:*

NEILSON, J. L., Medical Inspector. Detached from the Norfolk Navy Yard, September 30th, and ordered to the Boston Navy Yard. October 4th.

ROGERS, F., Surgeon. Detached from the Boston Navy Yard, October 4th, and ordered to the Norfolk Navy Yard.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee will meet in Nashville on Tuesday, Wednesday, and Thursday, October 12th, 13th, and 14th, under the presidency of Dr. W. F. Westmoreland, of Atlanta. Those who wish to read a paper, report a case, or show a specimen are asked to write to the secretary, Dr. Frank Trester Smith, of Chattanooga.

Society Meetings for the Coming Week:

MONDAY, *September 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *September 21st:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine; Connecticut River Valley Medical Association, Bellows Falls, Vermont.

WEDNESDAY, *September 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *September 23d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia (conversational).

FRIDAY, *September 24th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Births, Marriages, and Deaths.

Married.

BROWN—HAYES.—In Oshkosh, Wisconsin, on Thursday, August 19th, Dr. Frederick W. A. Brown and Miss Frances J. Hayes.

NOYES—JUDD.—In Milwaukee, on Wednesday, September 8th, Dr. F. B. Noyes, of Chicago, and Miss Mattie Judd.

Died.

BLACKWELL.—In Ebenezer, South Carolina, on Sunday, September 5th, Dr. Samuel J. Blackwell, in the sixty-fifth year of his age.

BOLLES.—In Montville, Connecticut, on Saturday, September 11th, Dr. John C. Bolles, in the eighty-first year of his age.

HUTCHINSON.—In Crawford, New Hampshire, on Saturday, September 11th, Dr. Morrison Thomas Hutchinson, of Englewood, N. J., in the thirty-third year of his age.

LYON.—In Rossville, Staten Island, on Saturday, September 11th, Dr. Caleb Lyon, aged fifty-five years.

Book Notices.

Transactions of the Southern Surgical and Gynæcological Association. Volume IX. Ninth Session, held at Nashville, Tennessee, November 10, 11, and 12, 1896. Published by the Association, 1897. Pp. xliv–471.

THIS volume shows the same earnest work which has characterized the previous history of this society. Most of the names that appear in its pages are familiar to surgeons and gynæcologists throughout the country, and their literary work is by no means limited to the meetings of this society. The papers and discussions were, as might be expected, of the most practical character, and the volume contains much valuable and suggestive material. The discussions upon inflammation of the vermiform appendix and cholelithiasis form especially interesting contributions to the literature of these subjects.

Crime and Criminals. By J. SANDERSON CHRISTISON, M. D., formerly of the New York City Asylums for the Insane, Blackwell's Island and Ward's Island, etc. Chicago: The W. T. Keener Company, 1897. Pp. 3 to 117. [Price, $1.]

THIS brochure is composed of a series of articles contributed last winter to the Chicago *Tribune*. It seems to us that their author would have displayed greater acumen had he been satisfied with the publicity thus obtained, without republishing the sketches in book form and claiming a place for them in medical literature.

Bibliographischer Semesterbericht. Der Erscheinungen auf dem Gebiete der Neurologie und Psychiatrie. Von Dr. med. et phil. G. BUSCHAN. Zweiter Jahrgang, 1896. Zweite Hälfte. Jena: Gustav Fischer, 1897. Pp. 157 to 344. [Preis, 4 Mark, 40 Pfennig.]

THE purposes and methods of this periodical were described in the *Journal* a few months ago. We wish it the popularity it deserves.

BOOKS, ETC., RECEIVED.

A Text-book of Diseases of Women. By Charles B. Penrose, M. D., Ph. D., Professor of Gynæcology in the University of Pennsylvania, etc. Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. 11 to 529. [Price, $3.50.]

The Diseases of Women. A Handbook for Students and Practitioners. By J. Bland Sutton, F. R. C. S. Eng., Surgeon to the Chelsea Hospital for Women, etc., and Arthur E. Giles, M. D., B. Sc. Lond., F. R. C. S. Edin., Assistant Surgeon, Chelsea Hospital for Women. With One Hundred and Fifteen Illustrations. Philadelphia: W. B. Saunders. London: Rebman Publishing Co., Ltd., 1897. Pp. 5 to 436. [Price, $2.50.]

True to Themselves. A Psychological Study. By Alexander J. C. Skene, M. D., LL. D. London and New York: F. Tennyson Neely, 1897. Pp. 3 to 397.

Medical Report of the Society of the Lying-in Hospital of the City of New York, 1897.

Cheyne-Stokes Respiration Phenomena. By N. S. Davis, Jr., M. D., of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Cardio-vascular and Renal Relations and Manifestations of Gout. By N. S. Davis, Jr., M. D. [Reprinted from the *Journal of the American Medical Association.*]

Atrophic Rhinitis. By John Edwin Rhodes, M. D., of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Antiseptic Treatment and the Limitation of Climatic Treatment of Pulmonary Tuberculosis. By E. Fletcher Ingals, M. D., of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Cure of Tuberculosis by Oxytuberculine, with Experiments on Patients, Animals, and Cultures. By J. O. Hirschfelder, M. D., of San Francisco.

The Treatment of Complicated Ulcers of the Cornea. By Clarence A. Veasey, M. D., of Philadelphia. [Reprinted from the *Therapeutic Gazette.*]

Is there ever a Serous Iritis without an Involvement of the Ciliary Body, or the Chorioid, or Both? By William Cheatham, M. D., of Louisville, Kentucky. [Reprinted from the *Ophthalmic Record.*]

The Hemiplegic State and its Treatment. By Archibald Church, M. D., of Chicago. [Reprinted from the *Chicago Medical Register.*]

A Case of Fœtus Amorphus (Anideus). By Arthur C. Jacobson, M. D., of Brooklyn. [Reprinted from the *Brooklyn Medical Journal.*]

Neurological Progress in America. By C. H. Hughes, M. D., of St. Louis. [Reprinted from the *Alienist and Neurologist.*]

The Relation of the Science of Medicine to Public-School Education. By John Punton, M. D.

Miscellany.

The Treatment of Acute Pneumonia.—In an article on this subject in *Treatment* for August 26th, Dr. Arthur Foxwell remarks that no disease calls more frequently for active interference. A cardiac dilatation, if noted early, may be remedied by the use of strychnine, but twelve hours later it may defy all efforts. Twenty-four hours' continuance of high tension may fatally exhaust a heart which would have struggled on had this been cut short twelve hours before.

Careful, repeated physical examination should be made, which need not disturb the patient, and the results of this examination should in every instance be recorded at the time in the bedroom; otherwise, says Dr. Foxwell, they lose most of their value, for it is only by the careful comparison of these results that the progress of the case can be estimated with any accuracy.

Continuous rest in bed, he says, until at least a week after the crisis is the most important treatment of all. Simply to lie in bed is not enough to bring rest; if the patient is restless, every possible source of irritation must be sought for; no detail is too small for consideration. Linen sheets are preferable, as they are smoother and cooler. The head should be low and the pillows changed frequently. The room should be large and airy, the window constantly open, the light subdued, and direct sunshine avoided; a temperature of 60° F. is the best, and this should be steadily maintained.

Light and unstimulating food is required, says Dr. Foxwell; meat is to be avoided, as also are all meat essences; milk alone is usually enough, although milk puddings with some of the various milk foods or bread and butter may often be added with advantage. If there is great thirst and milk is readily taken, it is better to skim it, and three pints of fresh or four pints of skimmed milk a day is quite sufficient for an adult. The reprehensible practice of allaying thirst with milk is, however, says the author, only too common; it leads to giving milk at all times and with every variety of frequency, and vomiting, constipation, and anorexia result. The author advises satisfying the patient's thirst without stint at every hour of the twenty-four with plain or flavored water, but not with liquid food. Food, liquid or solid, must be given at stated hours and the amounts must be small and about equal.

The emunctories should be kept free, for a moist skin is far less irritable than a dry one, and empty bowels unload the liver and ease the heart by lowering the tension, and the excretion of much urine means the rapid removal of inflammatory products and the dilution of the poison remaining in the body, while all this probably aids the excretion of the toxine.

The fever very frequently causes pleurisy, but this, says Dr. Foxwell, is seldom accompanied by much fluid exudation, and although the amount is rarely a source of anxiety, the pain it produces is often a serious symptom and must be energetically combated. The prompt application of from three to twelve leeches, according to the severity of the lesion (not the pain), is most successful. A cantharides blister, an inch wide and from two to four inches long, placed along the interspace in the middle of the affected region, also gives excellent results, but the after-pain is greater, and it interferes more with future examinations. Other local applications are a small ice-bag and a mustard poultice. Of drugs, says the author, aconite and antimony are the speediest reducers of inflammatory pain. Aconite in minim doses of the tincture every half-hour for twelve doses, and then every hour, often acts like a charm on the patient altogether, moistening the skin and inducing sleep; but its depressing action on the heart is extreme, and during its administration the patient should be seen every four hours at least. Antimony in doses of an eighth of a grain every hour for twelve doses, and then less frequently, is a safe and most reliable drug, and devoid of any marked effect on the heart. Morphine is practically the only sedative, and it may be given in early pleurisy—the first three days—without much anxiety; but later, especially in middle-aged and elderly people, it is full of danger.

Reactive inflammation, says Dr. Foxwell, is especially intense in acute pneumonia, sometimes excessive, the lung becoming widely involved or hyperpyrexia ensuing. For this condition, he says, the only safe and reliable antipyretic is cold, the most comforting form of which is the cold pack. An ice-bag applied to the inflamed portion of the lung reduces the temperature more powerfully, but it is not so pleasant, and it is not easy to keep in place. Cold sponging is a very mild way of applying cold, and is more useful as a sedative than as an antipyretic.

Insomnia at the onset is not uncommon; it is due to the suddenness with which the bodily functions are upset. Usually it occurs during the first night only, or at most for the first forty-eight hours. But insomnia arising during the course of the disease, or persisting from the beginning, is a very serious matter and a symptom of evil augury. It arises from the extreme irritation of the brain produced by the virulence of the poison, and is accompanied with constant restlessness, high tension, and tumultuous cardiac action. In this case the author thinks the steady application of cold is the most successful remedy, and a continuous cold pack more so than an ice-cap. Indeed, for insomnia the cold pack is much the best form of cold; the disturbance of a bath counterbalances its sedative action. The same may be said of sponging, while an ice-bag is so localized that the patient is usually conscious of its presence, and moreover the soothing effect of moisture to the skin generally is wanting. If there is great exhaustion a really hot pack forms a splendid stimulant with soothing after-effect. Morphine may be necessary; it should very reluctantly be resorted to; used thus, as a last resort it is always dangerous and, if there be chronic renal disease, very often deadly. It must be given intramuscularly, for by the mouth it is most unreliable, the absorbing powers of the stomach being at their minimum; from a sixth to a third of a grain should be the dose, and to it the addition of a full dose of strychnine is very valuable, both as an aid to sleep and as a guard against the fatal action of the morphine. Alcohol alone is sometimes a good hypnotic in pneumonia, but more from its continuous administration than a single dose. It also sometimes aids the action of the morphine and strychnine.

Concerning the question of cardiac exhaustion, he continues, in all but the mild cases this has always to be considered. In any severe case it should be carefully watched for after the third day, and from the very beginning treatment should be directed toward its avoidance. Strophanthus is better than digitalis, but neither is much to be depended on. Quinine is sometimes beneficial; but the drug which is far and away the best is strychnine. This may at first be given by the mouth, but as the case grows graver by the skin; in either way the dose is five minims of liquor strychninæ hydrochloratis every six, four, or even every two hours. Dr. Foxwell states that the best adjuvant to the strychnine is alcohol in good quantity; from ten to fifteen ounces of whisky daily to those accustomed to it in health, and even children will take from two to six ounces with benefit in those very rare instances in which they require it. A third of the alcohol should be given in the day and two thirds from 8 P. M. to 8 A. M., the greater part being reserved for the six hours between midnight and 6 A. M. If the patient is an abstainer, from three to six ounces of whisky may be enough; if he is a chronic drinker he should be given some throughout the illness, for, the author says, he fails to see the logic of removing a man's accustomed stimulant at the moment a sudden and severe shock has overtaken him.

A Case of Abdominal Wound with Protrusion of the Entire Stomach.—The following case, says Mr. C. Buchanan Hunter, in the *Lancet* for August 28th, may be of interest to those who concern themselves in abdominal surgery, inasmuch as the whole stomach protruded through a very small opening on the right side of the body, the result of an accident: The patient was a little girl, aged eight years, who was running on an errand for her mother, carrying a pint bottle in her right hand: She appears to have tripped and fallen forward on to the neck of the bottle, which caused a V-shaped wound at the lower part of the ribs, in a line with the right nipple, into the abdominal cavity. It was stated that immediately afterward there was protrusion of something which had increased to more than twice the size of what it was at the time. She was brought to the hospital two hours after the accident. The child was seen at once, when the entire stomach was found protruding, with a small part of the first portion of the duodenum. The stomach was very much distended with gas and quite tense. The child was suffering from shock slightly and a little pain. She was at once put under the influence of chloroform, the stomach and surrounding parts were cleansed with soap and water and mercurial lotion, and an attempt was made to return the displaced organ, without avail, and an incision about two inches long had to be made from the inner side of the wound toward the mesial line, through the abdominal wall; after this the stomach was replaced and the wound was closed. After completion of the stitches it was found that the dimensions of the original wound were three quarters of an inch in one direction and half an inch in the other. The patient made a good recovery, the temperature being normal all the time of her residence in the hospital. The wound was dressed with iodoform and healed by first intention.

A Case of Corrosive Poisoning, in which the Mucous Membrane of the Œsophagus and of a Part of the Stomach was vomited as a Complete Cast.—The following case, which came under the observation of Dr. J. C. Brown, of Smethport, Pennsylvania, is published in the September number of the *Buffalo Medical Journal:* The patient was a strong, robust man, thirty-two years old. When the author saw him, on April 27th, he had an anxious expression and was unable to speak above a loud whisper; he had little or no pain. On examining his mouth the author found the mucous membrane falling in shreds from every part of the buccal cavity and pharynx, except about an inch of the anterior part of the tongue and about the same area of the anterior part of the roof of the mouth.

The patient stated that on the day before he had found a bottle containing what he supposed to be whisky, and drank the contents. He immediately felt a burning sensation in the mouth and throat and became intensely sick at the stomach; he went into a barn, where he remained until the next morning; he had vomited and retched nearly all the remainder of that day and all night, and had been unable to swallow anything after he had taken the contents of the bottle.

Judging from the condition of the mouth, the author assumed that the substance must have caused a great deal of destruction of mucous membrane in the stomach, supposing the patient had swallowed the contents of the bottle, which the author somewhat doubted, as the symptoms did not indicate that the condition extended into the stomach.

The author ordered a lotion containing tannic acid, glycerin, and listerine, also an antiseptic solution to use with an atomizer. Milk and white of egg alternated with Armour's extract of beef were ordered in enemata once in four or five hours; rubbing with alcohol was also ordered. Two days afterward the author found that the patient, at the suggestion of his mother, had swallowed two teaspoonfuls of kerosene oil, which produced a good deal of nausea and vomiting; otherwise he was in about the same condition. The eroded portions of the mouth had turned somewhat dark from the lotion, the temperature ranged between 99° and 102° F., and the pulse between 80 and 120; there was some spitting of a purulent substance sometimes mixed with blood. This condition lasted until May 7th, when profuse hæmorrhages occurred, the patient vomiting nearly a pint of blood every half hour, according to the nurses. Dr. Brown gave him a hypodermic injection of a quarter of a grain of morphine sulphate and a thirtieth of a grain of strychnine nitrate, which seemed to control the hæmorrhage fairly well. Another hypodermic was given about five hours afterward; there was not much hæmorrhage during the day. Toward evening of the same day the patient vomited what at first sight appeared to be a blood-clot, but after washing it the author found it to be the mucous membrane and submucous tissue of the œsophagus and stomach. This, he states, was afterward examined by Dr. H. U. Williams, pathologist to the University of Buffalo, who found that it contained also a part of the muscular coat of the œsophagus. The œsophageal portion was in perfect shape with the exception of a few small holes which might have been made in the effort to expel it. The stomach portion was somewhat torn in strips, due perhaps to a more pronounced effect of the corrosive agent. The whole was about sixteen inches long. It can be seen in the museum of the University of Buffalo.

After the vomiting of this membrane, the author goes on to say, the hæmorrhage was very profuse for thirty-six hours and then stopped entirely. Three days afterward the patient was allowed to swallow, and chicken soup, milk, and milk and brandy were given in small quantities, which were gradually increased until May 15th, when he took about a quart of milk in twenty-four hours, some toast, and one or two raw eggs. During this time enemata of milk and extract of beef were given, which, with the exception of one or two, were well retained. He continued in this condition until May 30th, when the author found that the food was not being digested, that it simply passed on into the intestines, where it remained for a time and then passed per rectum in about the same condition in which the patient took it. The man was allowed food by the mouth because he craved it and retained it without distress, and, as death would inevitably be the result, the author thought he might as well be indulged. On the 30th of May contraction had taken place to within three or four inches of the stomach; afterward the whole length of the œsophagus was contracted. On the 1st of June he vomited shreds of a brownish substance, looking like portions of the cast, with a very foul odor. This continued for two or three days, and was followed by a yellowish substance even more foul-smelling than the other. The patient remained in this condition, gradually getting weaker and vomiting and retching a great deal, until he died, on the 24th of June.

Corrosive poisoning, says the author, is not an uncommon occurrence, but it is interesting to note that life may be prolonged, as in the present instance, for an unusual period after the ingestion of a corrosive powerful enough to destroy the mucous lining of the entire œsophagus and a part at least of the stomach; also that it is possible to take such a large amount of material into the stomach without distress afterward is remarkable.

A Needle in a Hernia.—The following interesting case is related by M. Tuffier in the *Presse médicale* for August 12th: The patient was a rather vigorous man of ordinarily good health, whose family history presented nothing particular. For about five years he had had a left epiploic hernia, completely reducible, which had never been held by a truss. For the past four or five months the patient had felt a sharp pain in the upper part of the left half of the scrotum, which was not constant, for it disappeared entirely when the patient was lying down, and returned when he moved, especially when he sat down or stooped. The pain gradually diminished and was not felt except at rare intervals; however, there was sufficient annoyance from the hernia to warrant surgical intervention.

At the examination a left epiploic hernia was found, but besides this, near the spermatic cord, toward the lower part of the hernia, a foreign body was very distinctly felt; this was long, thin, rigid, and hard, and felt like a metal needle implanted in the tissues. One of the extremities seemed also to be larger than the other, and this led the author to think it might be a pin. It was entirely independent of the skin and seemed to be fixed either in the epiploon or in the cord, and it was easily movable, so that the author was able to push it as far as the inguinal ring. When this body was palpated a sharp pain was felt, and the reduction of the hernia was rendered impossible by the presence of this pain.

It was evident that a metal substance, either a pin or a needle, was present, but, in order to complete the diagnosis, the Röntgen rays were resorted to, and what was evidently a needle was revealed. On the 10th of April an operation was performed; the usual incision for radical cure was prolonged on the scrotum somewhat more than usual, in order to enable the author to reach the foreign body more easily. The hernial sac, which was dissected above, was seen to contain a considerable amount of the epiploon. The foreign body proved to be a needle, the extreme point of which was broken on being seized by a forceps; then, in order to remove it entirely, the epiploon was cut above after ligation, and the sac with its contents was removed. Apart from a slight delay employed to complete hæmostasis of the central epiploic stump, the operation was rapidly terminated by suturing the peritoneal, the muscular, the aponeurotic, and the cutaneous layers. Recovery took place without any incident, and the patient is at the present time entirely free from hernia.

The entire hernial sac was again submitted to the Röntgen rays, which revealed the anatomical condition better than ordinary photography. The hernial sac contained about twelve centimetres of epiploon, which, toward its terminal part, was crossed through and through by the needle, which measured four centimetres in length; it was blackened and oxidized, and each extremity passed through the walls of the sac.

The interest in this case, says the author, lies in the fact of its rarity; that needles are found in the tissues is a well-known fact, but up to the present time they have never been met with in a hernial sac, although two cases somewhat analogous were reported by Broca in 1850, and by Burggraeve. As in these two cases, it is probable that the presence of the needle in the epiploon may be explained by involuntary deglutition.

Chronic Poisoning with Benzene.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 26th contains a report of the proceedings of the International Medical Congress, at which M. Santesson stated that he had observed nine cases of poisoning, four of which were fatal, in a factory where a solution of rubber in benzene was used. These cases had been observed exclusively in young women. The symptoms of poisoning were cephalalgia, vertigo, vomiting, throbbing, anæmia, and, above all, cutaneous hæmorrhages, and sometimes hæmorrhages of the gums, the stomach, and the genital organs. There was no icterus, which fact excluded the idea of poisoning by phosphorus. The progress of these symptoms was subacute, and the disease lasted several weeks.

The factory was badly ventilated, and in the workrooms a very strong odor of benzene had been noticed.

In one case, which had terminated fatally, microscopic examination of the organs had revealed the existence of fatty degeneration of the heart, the liver, the kidneys, the pelvic organs, and the endothelium of the blood-vessels.

The chemical analysis of the benzene used in the factory had shown it to be comparatively pure, and to contain only benzol and its homologues, the latter in a small quantity. No aniline or nitrobenzol had been found.

In order to explain the mechanism of the poisoning, M. Santesson had undertaken some experiments on rabbits, and from the results he concluded that the benzol had been the toxic constituent of the benzene in these cases.

The Mississippi Valley Medical Association.—The twenty-third annual meeting will be held in Louisville, on October 5th, 6th, 7th, and 8th, under the presidency of Dr. Thomas Hunt Stucky. The programme includes the following papers and addresses: An Address in Surgery, by Dr. J. B. Murphy, of Chicago; An Address in Medicine, by Dr. J. V. Shoemaker, of Philadelphia; The Nature of Croup following Measles, by Dr. I. A. Abt, of Chicago; Further Observations on the Use of Hydrogen Dioxide in the Treatment of Blepharitis Marginalis, by Dr. J. C. Ayers, of Cincinnati; Milk, its Production and Uses, by Dr. W. F. Barclay, of Pittsburgh; Regarding Hypertrophied Faucial Tonsils, by Dr. J. F. Barnhill, of Indianapolis; A Report of Five Cases of Heart Disease, by Dr. J. M. Batten, of Pittsburgh; Some New Thoughts on the Treatment of Locomotor Ataxia, by Dr. J. K. Bauduy, of St. Louis; The Surgical Treatment of Basedow's Disease, by Dr. A. F. Bock, of St. Louis; Some Remarks on Appendicitis, by Dr. John Young Brown, of St. Louis; Some Anomalous Conditions of the Spinal Cord, with a Report of Cases, by Dr. Sanger Brown, of Chicago; Posterior Radicular Neuritis, by Dr. Eugene G. Carpenter, of Cleveland; Of what Assistance has the Serum Treatment of Diphtheria been to the General Practitioner? by Dr. W. Cheatham, of Louisville; The Differential Diagnosis and Treatment of Cerebral Hæmorrhage and Cerebral Softening, by Dr. Archibald Church, of Chicago; Neurotic Deformities in Children, by Dr. J. W.

Cokenower, of Des Moines, Iowa; Ectopic Pregnancy, Clinical and Pathological Phases, by Dr. A. H. Cordier, of Kansas City; Beef—A War Paper, by Dr. Ephraim Cutter, of New York; Some Cases of Insanity in Adolescence, by Dr. Richard Deway, of Wauwatosa, Wisconsin; To Drain or not to Drain, by Dr. Arch Dixon, of Henderson, Kentucky; The Hypodermic Syringe and its Use in Malaria, by Dr. Kennon Dunham, of Cincinnati; A Report of a Case of Anæsthesia produced by Mercury, by Dr. C. Travis Drennan, of Hot Springs, Arkansas; Mothers and Daughters, by Dr. Sherwood Dunn, of Los Angeles, California; Diagnosis by Inspection in the Urinary Tract, by Dr. J. Rilus Eastman, of Indianapolis; The Diagnosis of Abscess of the Liver, based upon a Study of Twenty-five Cases, by Dr. A. R. Edwards, of Chicago; Typhoid Fever treated without Cold Baths, by Dr. Joseph Eichberg, of Cincinnati; The Antitoxic and Bactericidal Properties of the Serum of Horses treated with Koch's New Tuberculin (T. R.), by Dr. C. Fisch, of St. Louis; Pressure Symptoms after Head Injuries, by Dr. F. R. Fry, of St. Louis; The Surgical Treatment of Fibroid Tumors of the Uterus, by Dr. A. H. Goelet, of New York; Appendicitis, by Dr. Spencer Graves, of St. Louis; Severe Injuries from Electricity and what is Best to do, by Dr. H. Hatch, of Quincy, Illinois; Mouth-breathing in Children, by Dr. A. G. Hobbs, of Atlanta; The Civic Aspect and Therapy of Some of the Common Neuroses, by Dr. B. W. Holliday, of Cleveland; The Symptoms and Surgical Treatment of Perforated Intestinal Ulcers, by Dr. A. F. House, of Cleveland; Cocaine Anæsthesia in Perinæorrhaphy, by Dr. W. H. Humiston, of Cleveland; The Treatment of Obstructive Lesions of the Urinary Tract Anterior to the Bladder, with Special Reference to the Enlargement of the Prostate Gland, by Dr. C. C. Jacobs, of Frostburg, Maryland; Appendicitis, by Dr. E. L. Larkins, of Terre Haute, Indiana; Hysterectomy, by Dr. F. F. Lawrence, of Columbus, Ohio; The Elimination of Empiricism in the Treatment of Pneumonia, by Dr. Elmer Lee, of New York; The Relations of the Secular Press to Medicine and the Public, by Dr. I. N. Love, of St. Louis; The Treatment of Pulmonary Phthisis, by Dr. C. F. McGahan, of Aiken, South Carolina; A Plea for Early Operation in Cholelithiasis, by Dr. A. H. Meisenbach, of St. Louis; The Neuroses of Gout, by Dr. L. Harrison Mettler, of Chicago; Cathartics and Constipation, by Dr. A. M. Owen, of Evansville, Indiana; The Treatment of Hernia in Old Men, by Dr. A. J. Ochsner, of Chicago; Sanitariums a Necessary Factor in the Treatment of Chronic Diseases, by Dr. Curran Pope, of Louisville; The Growing Needs of Medical Political Organization, by Dr. J. Punton, of Kansas City; The Municipal Sanitation of Tuberculosis, by Dr. D. C. Ramsey, of Mount Vernon, Indiana; Tuberculin in Dermatology, by Dr. A. Ravogli, of Cincinnati; Abdominal Incision for Ascites, by Dr. B. Merrill Rickets, of Cincinnati; The Classification of Peritonitis, by Dr. Byron Robinson, of Chicago; The Carlsbad Springs of the United States of North America, by Dr. Enno Sander, of St. Louis; The Therapeutic Properties of Infant Foods, by Dr. E. W. Saunders, of St. Louis; The Treatment of Suppurating Fistulous Tracts, by Dr. E. J. Senn, of Chicago; Experimental Surgery, by Dr. E. B. Smith, of Detroit; Retrobulbar Optic Neuritis, by Dr. J. O. Stillson, of Indianapolis; Primary Tuberculosis of the Rectum, with a Report of Cases, by Dr. L. Strauss, of St. Louis; Intratympanic Surgery in Chronic Suppuration, by Dr. J. A. Stucky, of Lexington, Kentucky; The Treatment of Wounds by the Open Method, by Dr. J. B. Taulbee, of Mt. Sterling, Kentucky; Experimental Work on the Penetration of Vaporized Medicaments in the Air Passages, by Dr. H. M. Thomas, of Chicago; The Plastic Operation for Reforming the Interpalpebral Space, by Dr. K. K. Wheelock, of Fort Wayne, Indiana; and Congenital Dislocation of the Hip, by Dr. Alexander C. Wiener, of Chicago. Other papers will be read by Dr. Robert T. Morris, of New York; Dr. A. C. Bernays, of St. Louis; Dr. J. Homer Coulter, Dr. A. C. Klebs, and Dr. Harold N. Moyer, of Chicago; and Dr. Joseph Price and Dr. Frank Woodbury, of Philadelphia.

Ether and Chloroform.—Under this heading the *Boston Medical and Surgical Journal* for August 26th publishes an editorial in which the writer discusses the comparative safety and advantages of ether and chloroform as anæsthetics. The dangers which are to be combated, he says, during the administration of ether are connected with supersecretion of the respiratory mucous membranes, with obstruction of the air-passages by falling back of the tongue, with tonic contraction of the masseters, etc., dangers which result in asphyxia, and they can be directly and successfully met by measures directed to their treatment which are capable of being carried out by any physician of average skill.

Concerning the dangers of chloroform, the writer goes on to say that the principal danger from chloroform anæsthesia is the sudden syncope from cardiac paralysis, which, he says, is as likely to occur in strong as in weak subjects; it happens more frequently at the beginning than at the end of anæsthetization, presents conditions of the greatest difficulty for treatment, and frequently results in death. The writer thinks that in view of these conditions, although the superiority and greater convenience of chloroform in certain cases of cerebral surgery, operations on the respiratory passages, etc., may give it preference, its adoption as a routine anæsthetic ought to be condemned.

The writer refers to an address on The Causation of Chloroform Syncope, by Leonard Hill, which was published in the *British Medical Journal* for April 17, 1897, in which the author states that in a certain institution in Great Britain, in the course of a recent year, there were no fewer than twelve fatalities out of some three or four thousand administrations. The author went on to say: "This is no exceptional case; the deaths from chloroform are not recorded in the medical journals, for they would reflect upon the reputation of the administrator and the institution in which they occurred." In this paper, the writer continues, Hill refers to "a more pernicious and dangerous doctrine" put before the medical profession. "This doctrine," he says, "so long received by many with credence, is that chloroform kills by paralyzing the respiratory centre. . . . This doctrine that the paralysis of the respiratory centre causes chloroform syncope has been industriously spread abroad and instilled into the minds of the whole medical world."

Gaskell and Shore, and Hare and Thornton, continues the writer, found that the injection of chloroform into the jugular veins produced cardiac paralysis, *followed*, not preceded, by respiratory failure, a fact which the Hyderabad commission failed to find, owing to the facts, according to Hill, that pure instead of diluted chloroform was injected, that the vein was tied above the point of injection, and that a needle was used as an indicator of cardiac action. An insufficient acquaintance with physiological methods, the writer continues, has characterized the entire work of the Hyderabad commission. Gaskell and Shore found by careful and ingenious experimental methods that the heart was rapidly paralyzed by chloroform, and the respiratory centre was paralyzed, while the vasomotor centre was excited to increased action.

The writer alludes to Hill's experimental work which deals with the effect of chloroform upon cardiac inhibition by electrical excitation of the vagus, with syncope during prolonged anæsthesia, with the phenomena of fatal syncope at an early stage, and with the treatment of syncope. The following conclusions of the author give, he thinks, an adequate idea of the results of his carefully conducted experiments, and serve to confirm the opinion of those who object to the use of chloroform as a routine anæsthetic:

"1. Chloroform produces a primary failure of the circulatory mechanism and a secondary failure of the respiratory centre. The respiratory centre fails to act not only because it is damaged by the drug, but because of the anæmia of the spinal bulb produced by the fall of arterial tension. This is proved by the fact that the action of the respiratory centre can be renewed by raising the arterial tension. The depth of anæsthesia depends, as does the paralysis of the respiratory centre, on the primary fall of the arterial tension.

"2. Chloroform, more than any other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity.

"3. Chloroform abolishes these mechanisms by paralyzing the splanchnic vasomotor tone, and by weakening the action of the respiratory pump. When these mechanisms are totally abolished, the circulation is impossible if the subject be in the feet-down position.

"4. Chloroform also produces paralytic dilatation of the heart. It acts directly like amyl nitrite on the *musculature* of the whole vascular system.

"5. There are two form of chloroform syncope: (*a*) During primary anæsthetization. The patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension, and finally takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second stage it is suddenly filled with blood. This is drawn from the lungs, and is full of chloroform. The chloroform passes into the coronary arteries, and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously, or the pulse before respiration. (*b*) During prolonged anæsthetization this arises from gradually giving chloroform to too great an extent. The arterial pressure falls lower and lower, and, secondarily, the respiration ceases because of the anæmia of the spinal bulb. The heart is not in this case paralyzed by chloroform, because the drug is taken in gradually by the shallow respirations, and distributed slowly by the feeble circulation.

"6. Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope.

"7. Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse, the patient should be put into the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this manœuvre, and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated.

"8. Inversion, that is, placing the subject in the feet-up position, or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless.

"9. In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished, and chloroform may easily be the last straw to completely paralyze the circulation.

"10. Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope.

"11. Ether is in every respect a far safer anæsthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform.

"12. With the practical conclusion of the Hyderabad commission that the chloroform inhaler should be removed during the struggling of the patient or when the respiration is of irregular depth, I am in absolute agreement, but I consider their interpretation of their own experiments and tracings concerning the origin of chloroform syncope to be mistaken.

"Not only the work of all physiologists, but also the tracings of the commission, when rightly interpreted, prove that paralysis of the circulatory mechanism, and not of the respiratory centre, is to be dreaded by the anæsthetist."

Retraction of the Eyelids and of the Upper Lip.— The July number of the *Annales de dermatologie et de syphiligraphie* contains a report of a recent meeting of the Société de dermatologie et de syphiligraphie, at which the following case was presented by M. Du Castel: The patient, a girl eighteen years old, had a good family history; she had had no previous illness, and there was no eruption or abnormal pigmentation on the body; there were some non-pigmented cicatrices on the elbows and the knees from old wounds. There was no acquired or hereditary syphilis. The present affection had had its origin, according to the patient, in a small pimple on the bridge of the nose, near the inner angle of the right eye. In this region no scar was observed at the time of examination; moreover the pimple had not lasted for more than four or five days. Since then the patient had noticed that her eyelids began to droop and her upper lip to turn outward. The affection became progressively pronounced and she consulted a physician, who used the cautery on the conjunctiva, but without result.

When M. Du Castel saw the patient he was struck with the total ectropion of the two lower lids and of the upper lid, which had a peculiar appearance. It was divided by a groove into two parts, the cutaneous portion being very much drawn up, and the mucous part forming a rather marked swelling; the skin seemed to be diminished in extent, to be drawn tighter than it was ordinarily; the subnasal groove also seemed to be much shorter than in the normal condition; the lower lip was not perceptibly altered.

The total ectropion of the lower lids was due to reversal of the tarsal cartilage consequent upon the traction of the skin below. This, near the eyelids, was of a deep violaceous tint which extended for about three centimetres; the skin was smooth and very tense. This tension and discoloration were also observed in the outer commissure; the discoloration reached the upper eyelid, the venous vascular system of which was very much developed. The eyebrow was slightly drawn up. This gave to the face the appearance of a mask.

The skin between the lips and the eyelids seemed dry and somewhat wrinkled to the touch, and, above all, very tense, and did not regain its normal consistence until near the neck and the ears.

The affection, M. Du Castel thinks, was a retractile lesion of the skin which developed in four years, leading to ectropion of the lower eyelids and of the upper lip. The nature of these lesions, he says, seems to be very difficult to determine; they have the appearance of sclerodermia, but not all of its characteristics; the skin is not hard to the touch, it is at the most smooth and tense.

This case is particularly interesting, M. Du Castel thinks, because, according to Kalt, it is not an isolated instance, as he has observed several cases; therefore, this case is evidently of a pathological type.

The question of treatment presented some difficulties. In a similar case Kalt practised autoplasty to correct the ectropion, and gangrene of the flap resulted and also of the eyelid. Evidently, says the author, the skin of such patients is of such a nature that surgical intervention is to be feared, and he is of the opinion that it is necessary, above all, to endeavor to modify the nutrition of the skin by electrolysis.

Electric Cataphoresis.—The *Archives d'électricité médicale* for August 15th contains a long article in which Professor Simon Fubini and Dr. Pierre Pierini, of Pisa, give a detailed account of experiments made on man and on various animals, such as dogs, rabbits, guinea-pigs, and white rats. Desiring to ascertain if the faradaic current determined the passage of substances through the healthy skin, the authors made use of a Du Bois-Reymond apparatus which was impelled by a Grenet's cell. For the investigations with the constant current a Spamer apparatus of twenty-four cells, furnished with milliampèremeters, was employed. The poles of the battery were constituted of platinum wires which were plunged into two aqueous solutions, one being a five-per-cent. watery solution of sodium chloride, and the other the substance of which the absorption was to be studied.

In order to ascertain afterward if the passage of this substance through the healthy skin took place, the authors examined the urine passed after the experiment, and the results led them to infer the existence of the absorption from the physio-toxicological effects observed. The drugs experimented with were the following: Potassium iodide, sodium salicylate, sodium santoninate, strychnine nitrate, atropine sulphate, quinine hydrochloride, cocaine hydrochloride, and lithium salicylate.

From the results of these observations the authors make the following deductions: 1. These experiments confirm what they have already maintained—namely, that if these substances are not volatile, at least, at 98.3° F., they are not absorbed by the healthy skin of man or other animals with a constant temperature in such a way as to be recognized chemically in the urine or by their physio-toxicological properties. 2. The faradaic current does not cause the passage of these substances through the healthy skin, or else they pass in such small quantities that they can not give place to an appreciable reaction, either chemical or physio-toxicological. 3. The constant current causes the passage of some elements through the healthy skin; however, in order to introduce some substances, it is necessary to follow a certain direction; for others, on the contrary, an inverse direction; for this reason the authors were not fully convinced that the passage of the substances through the skin did not take place except from the positive pole to the negative pole. 4. The iodine of potassium iodide, the salicylic acid of sodium salicylate and of lithium salicylate, and the santonic acid of sodium santoninate penetrate the organism when the negative pole is plunged into aqueous solutions of these salts. The strychnine of strychnine nitrate, the atropine of atropine sulphate, the quinine of quinine hydrochloride, the cocaine of cocaine hydrochloride, the lithium of lithium salicylate penetrate the organism when the positive pole is plunged into aqueous solutions of these salts.

A Coccus Pathogenic to Man and Animals: Staphylococcus Hæmorrhagicus.—In the *British Medical Journal* for August 14th Dr. E. Klein refers to three cases of a vesicular eruption on the hands of patients who some days before had been skinning sheep which had died from "gargle" a few days after lambing. These cases came under Dr. James Colby's observations, and he sent to Dr. Klein a little of the lymph withdrawn under proper precautions from a vesicle of a patient, and this lymph was subjected to bacterioscopical examination, the results of which are described as follows by Dr. Klein: "The fluid sent in the capillary tubes by Dr. Colby was of a sanguineous-serous character. Examined under the microscope it contained numerous red blood-corpuscles and leucocytes and cocci, the latter as dumb-bells, but chiefly as small masses. The cocci measured from 0.4 to 0.6 μ in diameter, some showing the division into two crescentic granules, common among staphylococci.

"Plate cultures on the surface of nutrient agar and nutrient gelatin were made by rubbing a droplet of the fluid over the surface of the set agar and set gelatin, incubating the former at 98.3° F., the latter at from 68° to 69.4° F. In these plates an abundance of colonies came up. In one agar plate I counted over a hundred colonies; in the other agar plate their number in one part of the plate was so great that they were closely placed and uncountable. In the four plates that were made (two agar and two gelatin) I could discover only three colonies which were those of the common *Staphylococcus pyogenes albus;* all the others were of a different kind, but possessed of the same characters.

"The characters of these colonies in the plates and in the subcultures made from them in the different media are briefly as follows: On agar the colonies after twenty-four hours are round, moist, flat; white in reflected, brown in transmitted light; only slightly raised above the surface; under a magnifying glass they look granular, thickest in the central part, and possessed of a narrow filmy margin. They grow rapidly in size, and reach in several days a diameter of from 0.2 to 0.5 centimetre, at the same time the marginal filmy zone becoming more pronounced; after about a week each colony possesses over the greater part of its circumference a filmy, more translucent, marginal zone, somewhat irregular in outline and radially striated, the middle part being granular and of a somewhat concentric arrangement. In reflected light the colony after a few days assumes a light yellowish color, which, however, never becomes deep, and this color is observed only on the larger colonies.

"On gelatin plates the colonies are noticed after twenty-four hours under a magnifying glass as minute gray round dots, which show a dark centre and a more translucent margin. After from two to three days the colony, while enlarging, begins to sink into a pit in the gelatin, owing to liquefaction; this liquefaction proceeds slowly and gradually leads to the formation of a circular area of slightly turbid liquefied gelatin, in the centre of which is the whitish mass of the main colony.

"In agar streak culture the growth forms a gradually broadening flat band, thicker in the middle, thinner in the peripheral part, the margin of this latter irregularly outlined. The streak is white in reflected light; after some days it assumes a yellowish tinge.

"In gelatin streak culture the band of the growth liquefies the gelatin and sinks under the surface; as the liquefaction proceeds it forms at the bottom of the liquefied gelatin a whitish powdery mass, which after from ten to fourteen days assumes a yellowish tint. The liquefied gelatin is slightly turbid.

"In gelatin stab culture the line of inoculation is indicated after from twenty-four to forty-eight hours by a linear mass composed of spherical droplets, white in reflected, brown in transmitted light; on the upper free end of the stab there is a whitish platelike expansion of the growth. Liquefaction begins at the upper free end of the stab after from two to three days, the top plate of the growth sinking in; the liquefaction proceeds slowly, so that even after from ten to fourteen days it has not reached more than a third or a fourth of the growth, forming in the upper part of the culture a funnel-shaped turbid liquefied mass.

"In alkaline broth at 98.3° F. the microbe grows rapidly, causing in twenty-four hours turbidity; in alkaline litmus broth the growth is also good; after a day or two the litmus begins to change into neutral, and after from two to four days into acid (red).

"In milk at 98.3° F. the microbe grows well; during the first five to seven days the milk remains fluid, but after seven or eight days it thickens and a separation into turbid whey and casein coagula sets in; this separation is complete after nine or ten days.

"On steamed potato at 98.3° F. the microbe forms a transparent film which gradually thickens in the marginal part; at first it is grayish, and later on assumes a yellowish tinge in the thicker marginal part.

"On solidified blood serum at 98.3° F. a grayish filmy growth appears after twenty-four hours; this thickens and after from three to four days assumes a yellowish tinge in the thicker marginal part. No liquefaction of the serum is noticed at any time. The microbe dies when exposed to a temperature of 143.3° F. for five minutes."

From these characters, the author thinks it is a question of a coccus which belongs to the tribe of staphylococcus, more particularly to that group which comprises the *Staphylococcus pyogenes aureus.* Dr. Klein compares this coccus with that isolated by Nocard, and states that the coccus of Nocard is found associated with, and causing, gangrenous mastitis in milch sheep; this coccus was isolated from a vesicle on the hand of a man who had skinned sheep that had died, not from gangrenous or other mastitis, but soon after lambing. A striking difference, he says, between the two microbes is shown by the behavior of their cultures in guinea-pigs. Nocard's coccus injected subcutaneously into guinea-pigs, even in large doses of otherwise virulent culture, produced at the utmost a rapidly passing local swelling; cultures of this coccus, on the other hand, proved very virulent for the guinea-pig; death took place in from twenty to sixty hours, according to the virulence of the culture. Serum cultures act most virulently; gelatin cultures stand next in virulence, and agar cultures prove virulent up to the fourth or fifth day; after this the virulence diminishes considerably, causing a circumscribed hæmorrhagic œdema, but the animal recovers. When the animals die the following condition is found: The subcutaneous and subjacent muscular tissues of the thigh, the groin, the abdomen, the chest, and even the neck are much swollen, and contain a considerable amount of sanguineous serous fluid; there is no gas and there is no odor. The liver is pale and small, the spleen and lungs are not abnormal; the peritonæum and serous covering of the intestine are in a percentage of cases greatly injected, and the peritoneal cavity in these cases contains sanguineous fluid. The subcutaneous exudation shows under the microscope numerous red blood-corpuscles and leucocytes, an abundance of cocci as single cocci, as diplococci, and as small masses. The protoplasm of the leucocytes is densely filled with the cocci. The peritoneal exudation, when present, possesses the same characters. Cultures made of the subcutaneous fluid yield pure cultures of this coccus, so does the peritoneal fluid; the heart's blood yields on culture only a limited number of colonies, a loop of blood yields between ten and fifteen colonies only. Intraperitoneal injection of a small dose (from one to two loops) causes death from intensive peritonitis in from six to ten hours. The peritoneal cavity contains copious sanguineous fluid, in which are seen red blood-corpuscles and numerous leucocytes; the protoplasm of the latter is densely filled with the cocci; the fluid part contains the cocci also in great abundance.

Very small doses of virulent, or larger doses of attenuated, culture, says Dr. Klein, cause on subcutaneous injection general illness, passing off after two or three days, with local œdema, which, after several days, disappears. Such animals acquire hereby a certain though not a very high resistance against large doses of virulent culture.

In the rabbit the result after subcutaneous injection is general illness and extensive hæmorrhagic œdema, which leads to necrosis of the skin over the abdomen. Death takes place from general marasmus in about three weeks.

Neuroses due to Meteorological Conditions.—A neurosis due to atmospherical conditions, says Dr. Löwenfeld in the *Deutsche Medizinal-Zeitung,* 1897, No. 18 (*Revue médicale* for August 11th), may be observed either isolated or associated with other nervous diseases. It attacks both men and women, although the author has met with it more frequently in the latter. No age, except infancy, is exempt.

In a category of cases the hereditary conditions exercise a decided influence. A general febrile disease has often been found to be the starting point. Löwenfeld has had no occasion to observe the ætiological influence of nutritive anomalies; however, among old people it is especially those who live well who are attacked. Also, it is not yet known what the meteorological factors are which most affect neuroses. More frequently it is the change of weather which exercises this influence, and, generally, the passing from a favorable to an unfavorable period, which is indicated, moreover, by a combination of several meteorological conditions, notably of the hygrometric and the electrical conditions and of the quantity of ozone in the air.

The author divides the troubles which are observed in these forms of neuroses into two groups: 1. Symptoms of excitation, pain, and paræsthesia. 2. A condition of motor weakness. The pain is often of a very marked lancinating character. It may be limited to certain parts of the body, or it may vary in its location. The intensity is very variable. The attacks usually last twenty-four hours, sometimes only a shorter time; in some cases the pain has been known to last for several days.

Paræsthesia is much rarer than pain, and manifests itself in the form of extreme weariness, rigidity, and numbness in the limbs. Regarding motor troubles, so far the author has been able to make out a condition of weakness only in the arms.

The prognosis of neuroses of atmospheric origin is not unfavorable in young persons or in persons of middle age without hereditary tendencies. If a pronounced hereditary defect exists, recovery can scarcely be counted upon. In cases in which the pain is confined to the legs the onset of tabes may be suspected. The duration, however, of the malaise, and sometimes the fact of a previous infection, will throw a light on the diagnosis. In any case the diagnosis, from this point of view, says the author, should be conservative if it concerns a young subject, but at an advanced age, at sixty years, tabes can scarcely be taken into consideration, in spite of the rather frequent excruciating pains in the limbs.

The treatment consists first in strengthening the nervous system, of which the susceptibility to change of temperature and weather should be combated. If the pains are localized, local treatment should be employed, such as massage and electricity. When the attacks are grave anodynes should be resorted to, especially in old persons.

Preparations of Digitalis.—In the *Therapeutic Gazette* for August 16th Dr. H. A. Hare discusses the choice of the various preparations of digitalis. It has been the general view, he says, that each preparation is capable of producing effects peculiar in some respects to itself. It has been supposed that this variation depends upon the relative proportions of the various active principles of digitalis held in solution by the water or alcohol with which the preparation is made, and, he says, if it is true that each preparation has an effect of its own, it is also undoubtedly true that this is due to the reasons just suggested.

Digitalis, Dr. Hare continues, contains at least five principles, of which four are physiologically active, while the fifth is inactive. From these there may be developed other substances by chemical alterations or decomposition, but they probably are not primarily present. Each of these ingredients possesses a physiological action of its own, and each has a solubility of its own. Of the four active constituents, digitalin, digitoxin, and digitalein act upon the heart muscle, while digitonin has an entirely different effect—namely, the power of depressing the vagus nerves centrically and peripherally and the inhibitory ganglia in the heart. The digitalin here referred to, the author states, is not the digitalin of amorphous form prepared according to the process of Homolle, or the crystalline digitalin of Nativelle, neither of which is a pure digitalin, but it is the digitalin of Schmiedeberg.

The effect of Schmiedeberg's digitalin upon the heart is that of a powerful stimulant, for under its influence the individual heart-beats become more powerful (four to six times greater than normal), and it simultaneously causes a rise of blood pressure, first by increasing the strength of the heart, and second by stimulating the centric and peripheral vasomotor apparatus.

Dr. Hare states that the physiological effects of digitalein and digitoxin are identical with those of digitalin, except that they do not stimulate the vasomotor centre or the pneumogastric apparatus, and so do not directly raise blood pressure or slow the heart. In other words, he says, they increase the force of ventricular contraction. The effect of digitonin being to depress the vagus nerves, it will be seen at once that it antagonizes the vagal effect of the digitalin on these fibres and so prevents digitalis from slowing the heart to the extent that would result from the use of digitalin alone. It also depresses the heart muscle. The proportion of digitonin in digitalis varies, but it is not present in sufficient amount to entirely overcome the inhibitory influence of the digitalin.

In considering the solubility of these principles, Dr. Hare says the different effects produced by the infusion and tincture or fluid extract can be readily explained. Digitonin, he says, is soluble in water, as digitalein is, but digitalin is only slightly soluble and digitoxin is scarcely soluble in water at all. As a result the use of the infusion in a case of heart disease would not give the patient the same degree of cardiac power as the use of the tincture, for not only would the most powerful stimulant of all to the heart, vasomotor system, and vagi be present in small amount, but, in addition, the large proportion of digtonin would antidote it.

On the other hand, digitonin is sparingly soluble in alcohol, while digitalin and digitalein are readily soluble in it, digitoxin being slightly so. It would seem therefore, he says, that in the presence of a failing heart and circulation the tincture or the fluid extract are the preparations greatly to be preferred to the infusion, because they contain large amounts of the active stimulant ingredients.

The reason that the infusion acts efficiently in some cases as a diuretic, continues Dr. Hare, probably depends upon the fact that as it does not contain so much digitalin it is less apt to cause spasm of the renal vessels, but if the heart is feeble and there is renal stasis, the tincture is probably the better preparation to overcome this state, because it both aids the heart and by contracting the renal vessels overcomes the stasis. The use of digitalin is inadvisable, he adds, unless we are sure that we get that made according to the process of Schmiedeberg, for the other digitalins usually sold are very uncertain. The infusion is far more apt to disorder the stomach than the fluid extract or tincture, because of the irritating digitonin.

Original Communications.

A CONTRIBUTION TO THE STUDY OF SPINAL SYPHILIS.*

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[From the William Pepper Clinical Laboratory.]

THERE is, perhaps, no subject which demands more attention from the student of nervous diseases than syphilis of the cerebro-spinal axis in its manifold forms. The remark of Ferrier,† that "Venus is the patron saint of neurologists," is much to the point, and conveys a truthful idea of the influence of syphilis in the production of inflammation and sclerosis of nerve tissue.

I have chosen this subject because it is one of more general interest, and also because I am able, through the liberality of Dr. Dercum, to present to you the history and report of the autopsy and the histological examination of an interesting case of syphilitic paraplegia observed by him in his service at the Philadelphia Hospital. The history is as follows:

Pauline G., white, thirty-five years old, single, actress and public singer, was admitted to the hospital, September 28, 1895. The family history was negative. The patient had been addicted to the alcohol habit since she was nineteen years of age, at which time she also contracted syphilis, and had suffered from periodic "rheumatic" pains ever since. She had a severe attack of these pains in May, 1895. About September 1st of the same year (1895) the patient again began to suffer from severe pains in the lower limbs, and to lose power in these parts, and about September 12th the paraplegia became complete. The paralysis was observed first in the right leg, but in a very short time also in the left. There was no numbness at this time, and it was not until about the beginning of October that this was noticed, though the patient could give no distinct history of the onset of the anæsthesia. Retention of urine appeared shortly after the numbness was observed. The condition of the patient at the time the history was written, after her admission, was as follows: She was very anæmic, and complained of severe pains in the legs and trunk. The area of tenderness seemed to involve the inframammary region on the left side, and was situated in the deep tissues and costal cartilages. This area was exceedingly sensitive to pressure. Both legs presented an anæsthesia of irregular distribution, which was most marked in the right, and did not extend above the knees. Grasping the legs produced excessive pain, most noticeable in the right. The pupils were sluggish in reacting to light and accommodation. The right knee-jerk was absent, and the left was diminished in force. Pus was observed in the urine. The patient died December 3, 1895, and the autopsy was made two days later. The notes taken by Dr. Dercum at the autopsy, in a condensed form, are as follows: The body was poorly nourished. On the legs were some old and some recent scars, and over the sacrum and coccyx, with the latter as a centre, was a deep gangrenous area eleven centimetres in size dissecting into and under the coccyx and sacrum and adjacent tissues. The bladder contained a small amount of purulent urine, and its mucous membrane was thickened. The liver was marked by a large number of irregular indentations and scars, with here and there a small gummatous growth. Macroscopically the basal vessels of the brain did not appear to be very atheromatous, and there were no cerebral lesions noted. The entire posterior surface of the spinal cord was covered with a fibrino-purulent exudate from about the level of the second thoracic segment to the cauda equina. Anteriorly the dura was adherent in the upper and middle thoracic regions. The anterior surface of the cord revealed the presence of a fibrino-purulent exudate similar to that on the posterior surface, but less marked. The vessels of the anterior surface of the cord were everywhere unusually prominent, except in the upper portion of the thoracic region. They were possibly more tortuous and distended than is normal. On the posterior surface the vessels were entirely concealed by the exudate. The cord was somewhat soft, especially in the lower thoracic and lumbar regions.

The microscopical findings in this case are those frequently seen in syphilis. The infiltration within the meninges consists principally of uninuclear cells, although some few multinuclear may be found. In the lumbar region the lesions are of much less intense degree than in the thoracic, and the walls of the vessels are not greatly thickened; especially is this true of the lower lumbar portion, where even the small vessels are patulous. In the larger arteries there is only a slight thickening of the intima. A round-cell infiltration of considerable intensity may be noticed within the coats of the vessels and the surrounding meningeal tissue. At

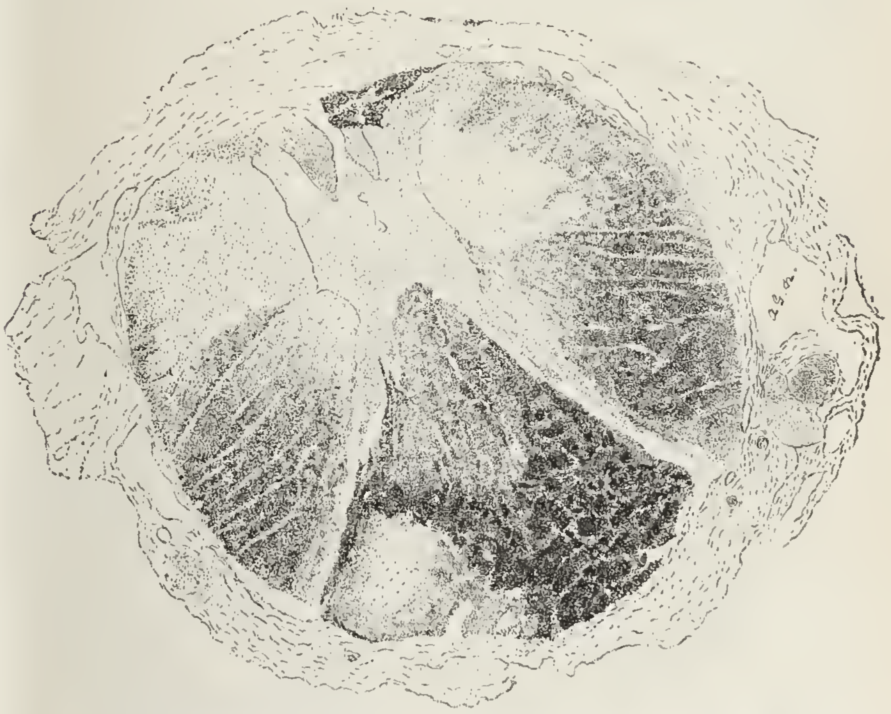

FIG. 1.—A section from the midthoracic region stained by the method of Marchi. The black portion represents degenerated medullary sheaths stained by the osmic acid. By comparison with the section from about the same level stained by the method of Weigert, it will be seen that a large portion of the latter, which appears to be normal, is in reality in the early stages of degeneration.

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* Read by invitation before the Section in General Medicine of the College of Physicians of Philadelphia, April 12, 1897.

† Ferrier. *British Medical Journal*, 1895, vol. i.

the level of the first lumbar segment the right posterior spinal root is greatly degenerated, while the left is only slightly affected. The knee-jerk, it will be remembered, was absent on the right side, and diminished in force on the left. Unfortunately, the right posterior roots of the lower lumbar segments were not obtained in the sections, but, judging from the condition of the first lumbar root, it is probable that the others also were degenerated. The motor cells are highly pigmented, some are tumefied, in some the nucleus is no longer central, and many present vacuolization of intense degree. Marinesco * regards the displacement of the nucleus as a valuable sign of cellular degeneration. The nucleus, according to his idea, moves from the centre, where it is always located in normal cells, toward the periphery, in search of nourishment. By the method of Marchi the posterior columns and the crossed pyramidal tracts are greatly degenerated from the lumbar region upward through the cervical, and the reflex collaterals of the lumbar region show distinct signs of degeneration. From the lumbothoracic junction to the midthoracic region the lesions acquire more importance, but above this point they gradually become less intense. Some of the cells of the columns of Clarke are merely masses of granular pigment. In the midthoracic region, and especially at about the seventh segment, many miliary gummata are observed within the meninges, and the sclerotic tissue has intimately united the meninges and cord both in the anterolateral and posterior columns. The lesions in the greater part of the cord are more intense on the posterior aspect. The dura and pia are united in the midthoracic region. Small gummata may be noticed about the walls of many small meningeal vessels, and there is an increase in the number of pial vessels. The posterior roots show gummatous change, and the few axis cylinders present in these are swollen. The round-cell infiltration here is intense, and there is also some about the vessels within the cord. At the level of the first thoracic segment the lesions are comparatively unimportant, and the same is true of the upper cervical region. By the method of Marchi some degenerated fibres may be noticed in the pyramids. This is therefore a case in which the primary lesions are almost confined to the thoracic region, and yet the process bears an additional seal of syphilis in the endarteritis of the basilar artery and its branches.

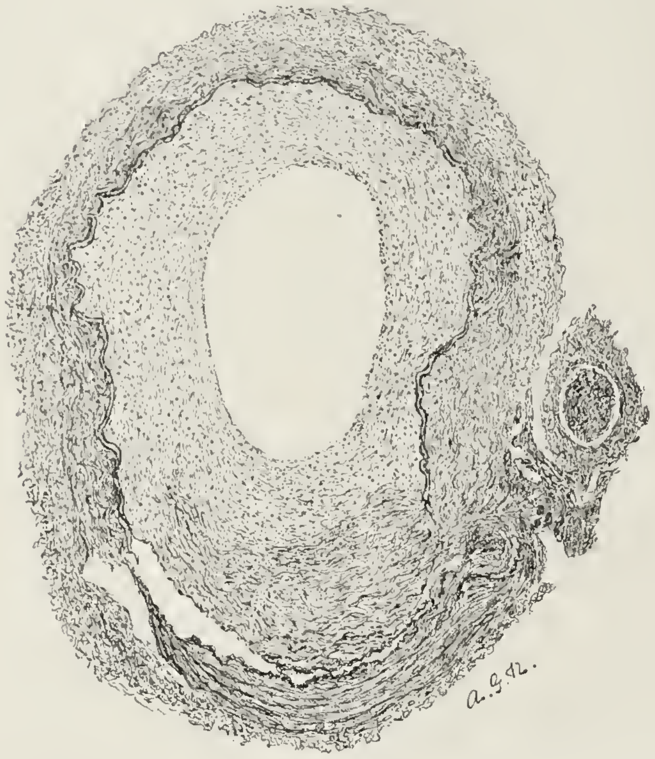

FIG. 2.—A transverse section of one of the branches of the basilar artery showing great proliferation of the intima. A small vessel on the right side of the section is entirely occluded.

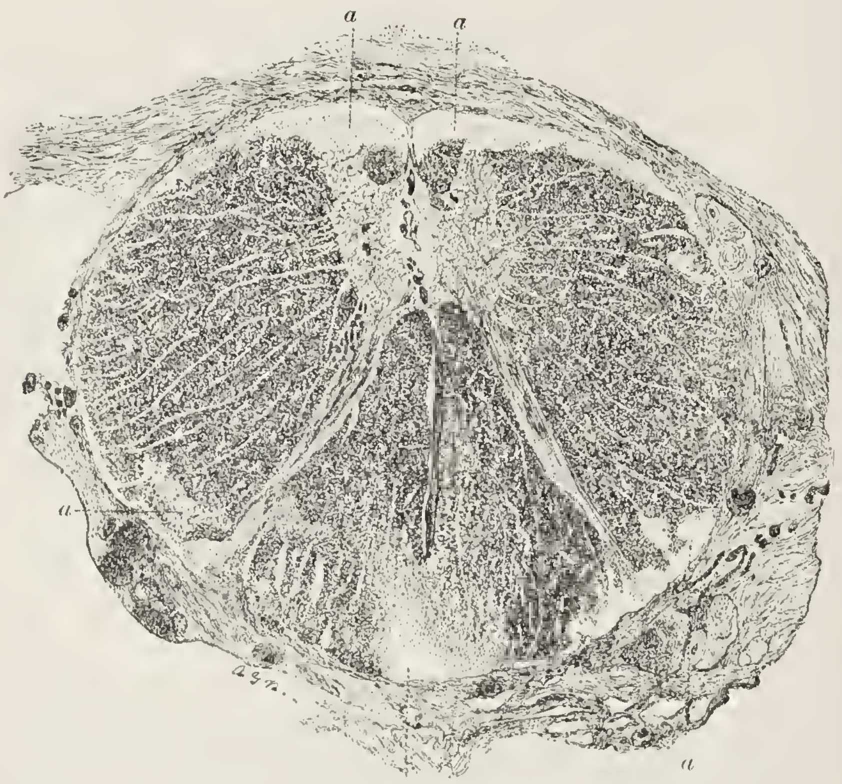

FIG. 3.—Section from the midthoracic region of the spinal cord, showing the proliferation of the membranes and their adhesion to the cord. *a a a a a*, degeneration of the peripheral parts of the cord.

Nageotte * has laid considerable importance on the character of the cellular infiltration in meningomyelitis. Cells with a large amount of protoplasm, and with irregular or multilobular nuclei, indicate a pyogenic process, whereas cells with little protoplasm, and round, small, regular nuclei, constitute the syphilitic infiltration. It remains to be determined if this is to be considered pathognomonic of syphilis, or if it occurs in other processes. Tuberculous lesions of the central nervous system may resemble so closely the syphilitic that it may often be difficult to make a diagnosis between the two processes in the absence of the bacilli. In the case described in this paper the infiltration belongs chiefly to the syphilitic type. If the uninuclear infiltration is pathognomonic of syphilis we have a sign of great value, but we have yet to establish this fact. I know of no lesions which are pathognomonic of nerve syphilis as studied by the microscope, and in making this statement I rely on no less an authority than Gowers.† This writer says: "I do not think that, at present, any confidence can be placed on histological characters only.

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* Marinesco. *Revue neurologique*, No. 21, 1896.

* Nageotte. *Nouvelle iconographie de la Salpêtrière*, 1895.

† Gowers. *Syphilis and the Nervous System*, p. 23.

Even the structure of the gumma is not distinctive; all that the microscope enables us to say is that the tumor *may* be syphilitic."

If the chief symptoms of spinal syphilis were briefly stated they would be: tenderness of the spine on pressure, lumbar pains, paresis or paralysis of the lower extremities, and possibly of the upper, vesical and rectal disturbance, altered reflexes, and pains in the extremities. During last summer I had the privilege of being present while Dr. Lloyd examined a number of cases of spinal syphilis, some of which were of Erb's type, and we were struck by the fact that frequently disturbance of micturition was the first sign of the disease, even in advance of any paresis.

In 1892 Erb * described a form of spinal syphilis which he thought should be distinguished from transverse dorsal myelitis, though his form was already known at the Salpêtrière, and Charcot was in the habit of speaking of it as syphilitic transverse myelitis (Marie).† The development of the disease is gradual, although the cases in which the symptoms develop within a few days Erb seems to consider closely related to his type. The patient presents spastic spinal paralysis with disturbance of the sexual and vesical functions and, to some degree, of sensation. There are no altered electrical reactions, no muscular atrophies, and, as a rule, no severe pains. The arms, face, and cranial nerves are not affected. Complete paralysis and contractures are rare. The tendon reflexes are much exaggerated. There is usually a tendency to improvement. In his paper Erb acknowledges that this form is not sharply separated from transverse dorsal myelitis, and that it might be associated with other syphilitic manifestations of the nervous system. He has obtained no autopsies, but he believes the lesions must be symmetrical and incompletely transverse; the posterior part of the lateral columns, the posterior horns, and the posterior columns must be affected, and the ventral part of the cord must be free. He thinks the condition is probably one of infiltration and myelitis resulting from diseased vessels. He says distinctly that it probably is not a systemic disease of the cord. The name he gave to this type is syphilitic spinal paralysis. Muchin,‡ who is one of the strongest supporters of Erb's view in regard to the individuality of this form, acknowledges that the histological investigations so far have not established its independence, and he refers to another clinical form described by Erb under the name of spastic spinal paralysis (lateral sclerosis), and independently by Charcot, under that of spastic dorsal tabes (*tabes dorsal spasmodique*), the fate of which, from the result of autopsies, has been similar to the syphilitic spinal paralysis. Since 1875, when lateral sclerosis was first described, until the present time very few cases have been reported which have shown that isolated, primary degeneration of the pyramidal tracts ever occurs. The first of these was by Dreschfeld.* In this case there was degeneration of the pyramidal tracts, which was greater in the thoracic than in the cervical region. In the cervical, thoracic, and lumbar regions the other parts of the spinal cord (the anterior and posterior horns, and the anterior and posterior columns) were perfectly normal. Charcot, who saw specimens from this case, found the lesions very characteristic. Jendrássik,† however, regards this case with considerable suspicion, and states that there were atrophied cells in the spinal gray matter. In Strümpell's case ‡ of spastic paralysis the peripheral neurones were not entirely normal, although very much less affected. It was probably a case of amyotrophic lateral sclerosis in its early stages. Another case has been reported by Déjérine and Sottas.# In this there was primary degeneration of the lateral columns, and slight sclerosis in the cervical and superior thoracic portion of the columns of Goll. There was no notable alteration of the cells of the anterior horns, and the anterior spinal roots were intact. Gowers || states that this primary degeneration of the pyramidal tracts has been found in cases of general paresis. Clinicians, in large part, have abandoned the name of lateral sclerosis, as one autopsy after another has shown that the symptoms had been produced by transverse myelitis, disseminated sclerosis, amyotrophic lateral sclerosis, etc., and instead of using this term, which implies an isolated affection of the lateral columns, they have preferred one which merely describes the symptoms, and have chosen that of spastic paraplegia.

Muchin attempts to show that Erb's other form of spinal paralysis, the syphilitic, may be due to systemic degeneration, although he acknowledges that no one has found the histological changes which he says Erb believed to be the cause of the disease. In the few cases which have been examined microscopically the degeneration of the lateral and posterior columns has appeared to be secondary to ordinary syphilitic myelitis or meningomyelitis. It would seem, however, that Muchin is much more inclined to regard the process as systemic than Erb was. Muchin, in support of his theory, refers to a case published in 1878 by Westphal △ (Case IV), which clinically and pathologically was very much like Erb's type. There was a focal lesion in the upper thoracic portion of the cord, confined to the crossed pyramidal and direct cerebellar tracts and to the posterior columns. There was apparently ascending degeneration in the posterior columns and peripheral parts of the lateral columns from the level of this focus, and descending de-

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* Erb. *Neurologisches Centralblatt*, 1892.

† Marie. *Semaine médicale*, 1893, p. 34.

‡ Muchin. *Deutsche Zeitschrift für Nervenheilkunde*, vol. ix.

* Dreschfeld. *British Medical Journal*, 1881, vol. i.

† Jendrássik. *Deutsches Archiv für klinische Medicin*, vol. lviii, Nos. 2 and 3.

‡ Strümpell. *Deutsche Zeitschrift für Nervenheilkunde*, vol. v.

Déjérine and Sottas. *Archives de physiologie*, 1896.

|| Gowers. *Diseases of the Nervous System*, vol. i (English edition), p. 440.

△ Westphal. *Archiv für Psychiatrie*, viii and ix.

generation in the lateral, and yet Westphal spoke of this as pseudo-secondary, and believed that in reality it was primary, chiefly on account of its symmetry. Within the focal lesion the blood-vessels were more numerous than in normal parts and were distended. Westphal believed that the upper and middle thoracic regions of the cord are peculiar, inasmuch as at these parts the posterior portion of the lateral columns and the posterior columns are frequently affected, for he found these parts involved as the starting points of the degeneration in a number of cases of paresis. Notwithstanding the weight of authority that is carried with the names of Westphal and Muchin, and the difficulty of accepting this focus in Westphal's case as the lesion from which secondary ascending and descending degeneration started, on account of the symmetry and limitation of the degeneration to certain tracts even within the focus, the theory of a primary degeneration of the lateral and posterior columns, beginning in a limited portion of the cord, at the same level, and extending in opposite directions, is no less difficult to understand. The case of Little's disease just published by Déjérine * throws some light possibly on Westphal's case. There was a limited, symmetrical lesion, consisting of sclerotic tissue and thickened vessels, between the first and second cervical segments, involving the posterior horns and part of the lateral columns, with secondary degeneration extending downward in the crossed pyramidal tracts from this focus. Although there were many sclerotic vessels in the posterior columns within the focal lesion, there was no ascending degeneration of these columns. Any one who has been able to study the specimens from this most important case, as I have been, will perhaps agree with me in the statement that Déjérine has shown the possibility of secondary degeneration from a limited, symmetrical lesion affecting only certain tracts of the cord even within the focus.

The case of Westphal was probably syphilitic, and it would be necessary, in accepting his view of primary degeneration of the affected tracts, to believe that syphilis may cause combined systemic disease of the cord, which, in view of the findings in pellagra and other diseases, may well be possible, as Strümpell † also admits. Muchin says we have as yet no case which better demonstrates the morbid changes in syphilitic spinal paralysis than this one of Westphal's. In view of this statement, and of the cases in which meningomyelitis has been found to be the cause of the symptoms, must we not admit that the systemic nature of Erb's syphilitic spinal paralysis has not been satisfactorily demonstrated? Why should we put aside these cases of meningomyelitis which have produced the clinical picture described by Erb and believe that Westphal's case is the true representative of syphilitic spinal paralysis? There is quite an extensive literature on this form of spinal syphilis, and among others the writings of Kowalewsky, Muchin, Popow, Kuh, Marie, Oppenheim, and Trachtenberg may be mentioned. Oppenheim * thinks this form is not sharply defined, but is only a part of general syphilitic meningomyelitis, and his view has been opposed by Muchin and Trachtenberg.†

The patient who forms the subject of this paper did not present clinically Erb's type of syphilis in all its details. The infection occurred sixteen years in advance of the acute symptoms; the disease in its acute form began with great pain in the legs about September 1, 1895, though similar pain had been felt in May of the same year, and the legs became gradually weaker until all power in them was lost by September 12th. Paralysis of the right leg occurred first and was soon followed by paralysis of the left. Numbness was first noticed about the first of October and was soon followed by retention of urine. There was likewise anæsthesia. The right knee-jerk was absent, and the left was minus. This was somewhat different from the type pictured by Erb, and chiefly in the condition of the knee-jerks, and yet the pathological findings are not unlike those which have been observed in cases of syphilitic spinal paralysis. Unfortunately, all the cervical cord was not obtained, and yet in the upper cervical and upper thoracic portions the process was very slight and caused no distinct symptoms, whereas in the midthoracic region especially the alterations were very noticeable. The thickening of the basilar artery in this case, so characteristic of syphilis, shows a well-known fact—*i. e.*, that spinal syphilis is not confined strictly to the cord, even when there are no symptoms pointing to cerebral disease. Had the process not extended quite so far downward, the knee-jerks would have been preserved or even exaggerated, for since the investigations of Westphal and others we know that this reflex arc is situated in the upper lumbar cord. Had death occurred later, the symptoms would probably have become less severe, as we may judge from the history of many other cases. Oppenheim ‡ says that he and Lamy have observed cases of cerebro-spinal syphilis which finally resulted in the form described by Erb.

In assuming that the knee-jerks would have been exaggerated in this case had the lumbar cord been intact, and that the clinical picture would then not have been unlike Erb's type, no claim is made which will probably call forth much criticism, in view of the degeneration of the lateral columns, for it is a generally accepted fact that degeneration of the pyramidal tracts, if the posterior columns in the lumbar region and the peripheral neurones are intact, usually causes exaggerated reflexes; and one explanation which has been given is that cerebral inhibition is in this way removed, and peripheral irritation is transmitted to the motor cells of the spinal cord without any restraining cortical influence. The muscles are therefore in a condition of constant hypertonia. This theory, however, can not explain the cases of hypotonia with exaggerated reflexes. The pyramidal tracts have been better studied than any others in the central nervous system, and yet we are far from thoroughly understanding their physiology. As van Gehuchten * reminds us, in complete transverse lesions of the upper part of the spinal cord the muscles of the lower part of the body are always flaccid and there is abolition of reflexes, and yet there is descending degeneration of the pyramidal fibres. Bischoff † has recently published an interesting paper on this subject, and has attempted to explain this fact, which was first made prominent by Bastian. In rapidly developing, complete, transverse lesion of the cervical and upper thoracic cord the vasomotor nerves are also paralyzed. As a result of this, the abdominal blood-vessels are distended, and there is anæmia of the lumbar cord, with loss of tendon reflexes, which becomes a permanent loss if organic changes develop. In cases of slow development the cause of the absence of the reflexes must be sought in such conditions as secondary degeneration of the muscles and nerves, or in involvement of the lumbar cord by secondary degeneration.

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* Déjérine. *Comptes rendus hebdomadaires des séances de la Société de biologie*, March 31, 1897.

† Strümpell. *Deutsche Zeitschrift für Nervenheilkunde*, vol. v, p. 244.

* Oppenheim. *Berliner klinische Wochenschrift*, 1893, p. 837.

† Trachtenberg. *Zeitschrift für klinische Medicin*, vol. xxvi, 1894.

‡ Oppenheim. *Die syphilitischen Erkrankungen des Gehirns*, p. 177.

It has been accepted by many that the contracture of hemiplegia is due to descending degeneration. Contracture and increased reflexes are frequently associated, and it is possible that the former is often a result of the latter. There are contractures of other types, such as are seen in flaccid paralysis, and these are probably due in large part to malposition and decrease in size of the muscles from disuse. It is very doubtful whether contracture is really due to degeneration of the pyramidal tracts alone. We still have much to learn concerning the pyramidal tracts. The recent experiments of Wertheimer and Lepage ‡ have caused much perplexity. These investigators cut the pyramids in the dog, and yet electrical irritation of the cortex caused contraction of the limbs. The only explanation which seems possible is that other fibres than those in the pyramidal tracts must have conveyed the impulse downward. Even if this is true of the dog, it does not follow that the same results could be obtained in man under similar conditions. We know that in some of the still lower forms the motor fibres are in the posterior columns. Van Gehuchten seeks to explain the results obtained by Wertheimer and Lepage by a hypothetical motor cortico-ponto-cerebello-spinal tract, which is supposed to be closely connected with the motor cortico-spinal tract as far as the pons, and from this point the former is supposed to make a *détour* through the cerebellum, and to descend in the cord to the outer side of the pyramidal tract.

The development of the complete paraplegia within twelve days after the beginning of the acute symptoms in this case is of great interest. It is not generally recognized that the paraplegia of spinal syphilis often begins acutely. I can remember well a patient of Déjérine, who used to come to the clinic of the Salpêtrière, whose paraparesis was first noticed in attempting to descend from the top of an omnibus. He succeeded in reaching the ground with considerable difficulty. Any of the symptoms may begin acutely, and according to Sottas * the cause must be sought in vascular lesions. The small vessels of the cord are terminal, and occlusion of a large number of these must necessarily affect nutrition and cause ischæmia. In spinal syphilis the veins are usually more affected than the arteries. The attack may be apoplectiform. A portion of the variation in the symptoms in spinal syphilis is probably due to the vascular condition, just as transient hemiplegia occurs in sclerosis of the cerebral arteries. Lancereaux, Lamy, and Sottas, among others, have called attention to the vascular lesions of spinal syphilis, and the latter, while admitting that the cellular infiltration may spread from the meninges to the cord, or may be found about the vessels within the cord, regards these lesions as of secondary importance. The degeneration of the nervous elements resulting from the anæmia of the cord is the condition especially to be considered. In one case reported by Sottas death occurred sixty hours after an abrupt attack of paraplegia, and microscopical examination was made. The case is of great value in showing the nature of the early lesions. The arteries, and especially the veins, throughout the cord were much affected, their walls were thickened, many were occluded, and there were some foci of circumvascular infiltration in the meninges and cord. In the superior thoracic region the cord was softened, the axis cylinders were swollen, and the nerve cells were in the early stages of degeneration. There was no overgrowth of the neuroglia, as the process was acute. Certain writers have described syphilitic paraplegia without appreciable lesions (Sottas). It is probable that many of these cases were imperfectly examined, or that death occurred before the changes in the cord had progressed very far. As a rule, syphilitic meningitis and myelitis do not occur as two distinct processes, and yet myelitis without meningitis has been described by a number of writers. It is probable that the sclerosis which occurs in old cases of syphilis is chiefly from the neuroglia, and not a perivascular sclerosis from the infiltration. Sottas speaks of this, and mentions the fact that thickened vessels may be found within normal portions of the nervous tissue, and even when they are within sclerotic areas their walls are distinct from the surrounding sclerotic tissue. This is by no means contradictory to what we know of the reaction of the neuroglia. The descending degeneration after a primary lesion is a common occurrence, and proves the tendency of the neuroglia to proliferate when the nervous elements are destroyed.

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* Van Gehuchten. *Revue neurologique*, No. 3, 1897, and *Journal de neurologie*, Nos. 4, 5, and 6, 1897.

† Bischoff. *Wiener klinische Wochenschrift*, 1896.

‡ Wertheimer and Lepage. *Comptes rendus hebdomadaires des séances de la Société de biologie*, June 19, 1896, p. 620.

* Sottas. *Paralysies spinales syphilitiques.*

The development of the acute symptoms sixteen years after the infection is worth mentioning. The positive findings by the method of Marchi proved the recent origin of the degeneration. There seems to be no period in which the central nervous system may not be affected by the syphilitic virus. In Brasch's * case only a few months elapsed, and Oppenheim, Gowers, Jolly, Althaus, and others have noted this rapid development. Althaus † has seen the nervous symptoms develop three months after infection. Althaus and Gowers have declared that it is impracticable to make a distinction between the early and late forms of nerve syphilis, for the same lesions may occur at any period.

The posterior portion of the meninges was most affected. This has been frequently noticed in chronic meningitis (Westphal and others). It may be that during the recumbent position the poison by gravity sinks to the posterior part of the spinal canal, and more of the toxic agent is present in this portion. If this is not correct the explanation is difficult.

There is one form of nerve syphilis, not always purely spinal, which is seldom spoken of, and, indeed, not generally known. I refer to the syphilitic disseminated sclerosis, a case of which has been published by von Bechterew ‡ within the past year. To him, in large part, is due the credit of making this form known, although his case was not the first. One need only to glance through the various text-books in order to see how little importance has been attributed to syphilis as an ætiological factor in the ordinary disseminated sclerosis, and it has not been demonstrated that it should be regarded in any different light. Von Bechterew's case was atypical clinically and histologically, but nevertheless the fact remains that syphilis may give rise to disseminated foci and to a clinical picture closely resembling multiple sclerosis. B. Sachs # also has lately spoken of this from a clinical standpoint. The question is one that we all probably have puzzled over in the presence of a case of disseminated sclerosis with a frank acknowledgment of previous syphilis. In the interesting case reported by von Bechterew the origin was found to be in the vessels, and a thickened vessel was observed in the centre of nearly every focus. It seems from recent studies, as those of Redlich, || that in the ordinary disseminated sclerosis the alteration of the vessels is not the cause of the proliferation of the neuroglia, but that the vessels are secondarily affected. In von Bechterew's case the characteristic syphilitic lesions of the basal vessels and a gumma in the left thalamus were found, which were clear evidences of the syphilitic nature of the process. Secondary degeneration was observed as a result of these foci. This secondary degeneration, as is well known, is very uncommon in disseminated sclerosis, and yet a case has been reported by Werdnig.*

Gasne † has examined the spinal cord of thirty fœtuses; twenty-six of these were born of syphilitic parents. In four cases he found lesions of intense grade, identical with those seen in acquired syphilis, and in seven they were less important, but not doubtful. The meninges and vessels are most affected in the hereditary form as in the acquired. He has examined critically all the cases of hereditary spinal syphilis reported, and concludes that the lesions are the same whether the disease is transmitted by the parents or acquired by the patient. This is a subject worthy of careful consideration. Nervous diseases have not been attributed to hereditary syphilis to the degree they have been to the acquired, and yet if the lesions of the forms we recognize as syphilitic are always the same, are we venturing too far when we ascribe to hereditary syphilis an influence in the production of the metasyphilitic diseases, tabes and general paresis? A few cases of general paresis have been reported in early life, and recently Bloch, ‡ in Berlin, presented a patient of thirteen years with hereditary syphilis, in whom symptoms of tabes had been evident since the age of five, although he hesitated to give the name of tabes to this case. He stated that in the recent literature the number of cases of tabes in youth on a positive hereditary syphilitic basis had increased. Oppenheim remarked that no autopsy had as yet demonstrated the occurrence of tabes in childhood. Mendel was able to report a case of congenital syphilis in which tabetic symptoms had begun at the age of twelve years, and at twenty-four the disease presented the typical appearance of tabes. Hereditary syphilis may be manifested in the nervous system soon after birth, but it may first be seen at the age of puberty, or even later.

The great degeneration of the lateral and posterior columns in this case, probably from vascular sclerosis and ischæmia, explains the ataxic paraplegia sometimes seen in spinal syphilis.

DISEASES OF THE ALIMENTARY CANAL
IN THE LIGHT OF ITS ANCESTRY AND DEVELOPMENT.#

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Even in these democratic days we attach a good deal of value to pedigree. We are apt to forecast the future of a man according to the blood that runs in his

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* Brasch. *Deutsche Zeitschrift für Nervenheilkunde*, viii, p. 418.

† Althaus. *British Medical Journal*, 1895, vol. i.

‡ v. Bechterew. *Archiv für Psychiatrie*, xxviii.

Sachs. *Journal of Nervous and Mental Disease*, March, 1897.

|| Redlich. *Arbeiten aus dem Laboratorium für Anatomie und Physiologie*, No. 4.

* Werdnig. *Medizinische Jahrbücher*, 1888.

† Gasne. Abstract in *Revue neurologique*, No. 4, 1897.

‡ Bloch, Oppenheim, Mendel. *Centralblatt für Nervenheilkunde und Psychiatrie*, February, 1897, p. 70.

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veins—to say nothing of a horse. To be sure, there is nothing certain or necessary whatever about these estimates; they furnish us simply with suggestions of probable tendencies. But then most questions in medicine, as in business affairs, have to be decided upon an intelligent balance of probabilities, as even the advocates of that Ananias of the nineteenth century, the statistical method, are willing now to admit, and we believe that a consideration of the ancestry and history, first of the individual cells, and then of the organs into which they have grouped themselves, will furnish us with valuable practical data for estimating their probable tendencies not only in health, but also in disease. The history of their growth in the past is an important key to their probable behavior in the future.

The adult human food tube, in its highly complex condition, is indeed "fearfully and wonderfully made," and a mere glance at it is enough to explain in part why we must so fervently assent to the modified elegy of the Psalmist, "Man born of woman is few in years and full of bowel troubles." My purpose is to hastily glance over its course of development, both from the earliest and simplest form in our long and illustrious line of prehuman ancestry, and also from its first appearance in our individual embryonic history. The earliest appearance of anything which could be dignified with the name of a stomach is found, of course, in the *Amœba Proteus*, and consists simply of a dipping or pouching-in of any part of its surface which happens to come in contact with a food morsel. The cell literally engulfs the edible particle, partly by allowing it to sink into the semifluid mass, and partly by flowing out in pseudopods upon both sides of it, until the processes meet and inclose it. The stomach is a dimple deepening into a pouch. When all the soluble elements of the "meal" have been extracted, the pseudopods slowly flow apart, the pouch becomes open again, and the amœba gently glides back on either side, while the undigested remnants are swept away by the same currents that brought them there. In fact, the organ is an impromptu, and can be improvised on a moment's notice at any part of the amœba's surface; and this is the typical form of stomach in the protozoa. Absolutely simple as the device is, it has its advantages: if one part of the surface becomes "dyspeptic," a new one can be utilized; two or three different food masses can be accommodated at once, without even waiting for a mouth to be emptied; no such thing as colic is to be feared, for as soon as the amœba begins to "wish it hadn't," it can open its pouch and, behold! the offending matters are outside the breastworks at once. We are not so tremendously superior to our ancestors as we sometimes imagine.

In the polyzoa the organ first attains the dignity of a permanent institution. Here, as in the hydra, for instance, it becomes a simple, tubular bag or pouch round which the rest of the organ arranges itself—merely a part of the general surface which has been tucked in for digestive purposes and remained so, as it were. It has, of course, a mouth with a row of cilia or tentacles round it, but no other details of any importance. In the higher members of the group, such as the sea anemone, the mouth of the bag becomes deeply grooved on either side, and by the aid of cilia a "down-current" is established in one of these grooves and an "up-current" in the other, so that food goes down on one side and the excreta are returned upon the other. This tendency increases until, in the molluscs, the two grooves become separated by the downgrowth of a sæptum; the primitive bag is changed into a U-shaped tube, with two openings serving as mouth and anus, though lying almost side by side. In worms the U gets straightened out, as it were, and behold the primitive alimentary canal, a simple tube of almost uniform calibre, running straight from one end of the body to the other. From this on, it is simply a question of dilatation of this portion and coiling of that, till we reach the very highest form of the organ in our cousins the herbivora.

These swellings and coilings, although ultimately resulting in a very elaborate structure, are originally of the very simplest possible character, and in all cases will be found to depend directly upon the digestive and alimentary needs of the forms to which they belong. They are simply a response of internal conditions to external conditions, the external condition, in this case, being, for the most part, the nature of the food supply. In the great groups of insects and crustacea these changes consist almost entirely of certain biting, grasping, and crushing mechanisms, mostly in the forms of rings or arches about the anterior opening of the tube and an enlargement somewhere in its middle third for the delay and moistening of the food, usually followed by a second crushing mechanism or mill of the gizzard type, the remainder of the canal continuing straight and almost of uniform calibre directly back to the anus. And in this form the canal enters the vertebrate family. In the lower species of fishes it still consists mainly of a simple tube, the anterior part of which is considerably dilated for the obvious purpose of permitting the prey to be swallowed whole. At the beginning of about its middle third this dilated part of the canal takes a somewhat sudden bend upon itself, much after the fashion of an old-fashioned German tobacco pipe, after which it rapidly tapers down again to what might be regarded as its primitive calibre, and pursues its course to the anus in a direction varying from almost a straight line in some of the lower forms, such as the gar pike, to the formation of two or three simple loops in the true bony fishes. Its average length is scarcely more than once and a half to twice the length of the body of the animal, and this, of course, is obviously correlated with the almost purely carnivorous habits of the fish and the readily soluble nature of the flesh of the forms upon which it lives. The canal of the fish is constructed on the principle of being just adequate to engulf the food, retain it until absorption can take place, and then discharge it as promptly as possible. And this same principle will explain the construction of almost the highest forms of the alimentary canal. In its directness and simplicity it reminds one somewhat of the story which is told of Mr. Lincoln, growing out of a dispute between two would-be authorities upon matters of artistic proportion as to what was the proper length of the legs of a man. The dispute waxed hot, and the question was finally referred to Mr. Lincoln for his opinion. After hearing the statements of both parties, Mr. Lincoln deliberated for a moment, and finally gave it as his opinion, "Well, I should think a man's legs ought to be long enough to reach from his body to the ground." And this seems to be the aim of the piscine alimentary canal.

In reptiles much the same condition of affairs exists, except that the canal behind the stomach is somewhat longer and more elaborately coiled, owing, apparently, to the somewhat less soluble nature of their still flesh food. In birds we find a distinct step forward in the line of complexity, consisting of a special dilatation in front of the stomach, in the course of the gullet, known as the crop, where the soaking and macerating of the food materials take place, and a reappearance of the old ancestral crustacean and vermian "gastric mill" or mechanism for crushing the food, in the stomach proper, in the shape of the well-known gizzard, which occupies a position corresponding to the pylorus and pyloric extremity of the mammalian stomach. The intestine has also become considerably elongated and in consequence coiled, so as to accommodate itself to the body cavity. It is also beginning to show signs of division into a small and large portion. In mammals, of course, we have the familiar condition of a large mouth cavity, but, as the prey is no longer swallowed entire, a small gullet, an expansion of varying size known as the stomach, a more or less elaborately elongated and coiled portion for absorptive purposes, the small intestine, and a curiously puckered or sacculated large intestine and tubular rectum. The range of variation in the comparatively simple specializations is, however, enormous, all haromizing in every case with the primitive keynote of the nature of the food and the conditions under which it must be digested. The typical carnivorous canal, for instance, with its moderate-sized, pear-shaped distention for a stomach, its simple coils of small intestine, its small cæcum and short large intestine, measuring in all only from three to six times the length of the body, is obviously the fish food tube, modified for the purpose of attacking flesh instead of fish. At the other extreme the enormously ballooned and many-cavitied gastric pouch, the long and complicated small intestine, the huge cæcum and colon of the herbivora, reaching a length of from twelve to twenty times that of the body of the animal, is a striking illustration of immensely increased elaborateness, in order to contend with a food of much greater bulk and a correspondingly difficult digestion. The cæco-appendix alone in some of these forms may be of twice the length of the body—a greater proportional length than the entire alimentary canal in some lower species.

While this development of the main calibre of the tube, so to speak, has been going on, a number of important appendages, or, more accurately, in the language of the street, "side issues," have been springing up in the shape of little pouches or pockets budding out from the wall of the canal from certain convenient points, and by a further course of budding and rebudding forming ultimately the more or less elaborate glands which secrete the ferments and juices needed in the various digestive processes. There are several pairs of salivary glands which bud out from the sides of the mouth part of the tube; thymus and thyreoid, which are given off from its upper third; the numerous tubular buddings just beyond the pyloric region, which ultimately result in the massive liver on the one side and pancreas on the other; and, finally, the little air bladder which sprouts out from the ventral aspect of the gullet and enlarges to form the lungs—all of them the result of that simple but wonderfully adaptable process of pouching or invaginating by which the stomach itself in the amœba or the hydra was originally formed. Indeed, it might be said, in passing, that the nervous system, the muscles, the skeleton, and the special senses will be found either growing directly out from this wonderful little tube or in response to some of its demands. In fact, the best definition from a morphological standpoint that has been given of man is "a stomach and its appendages."

When we turn to the individual life history of the human stomach we find it simply a striking epitome of its ancestral history. Beginning, probably, as a dimple upon the surface of the mulberry mass, changing rapidly to a thimblelike pouch or cup in the gastrula, from this to a simple longitudinal tube, only partially closed. This tube, first of all, shows the flexion and slight dilatation for the stomach, next a dipping-in of the epiderm to form a mouth (stomodæum), later still a similar dipping-in (proctodæum) at the caudal end to form the anus, then the occurrence of coils in the hitherto straight intestine, and finally the outgrowth of a large segment between this and the rectum, which is often not properly adjusted in its final position and moorings even at birth.

So much for the double pedigree. Now let us see if we can find any connection between this and the behavior of the canal in health and disease. The thing that strikes us first of all is that the stomach part of the canal is actually undergoing some of these changes during the life of the individual. The stomach of the infant at birth is often but little more than a simple, almost spindle-shaped dilatation, followed by a hooklike curvature in the course of the primitive canal. It was discovered practically a number of years ago that its capacity in proportion to the body was much smaller than that of the adult, and more careful investigations have made this discrepancy greater yet, until Rotch declares, in his latest paper, that what might be termed the comfortable or normal capacity of the human stomach at birth is scarcely five sixths of an ounce. It has almost no fundus, and in consequence can reject its contents with an ease and promptness familiar to all. In fact, an infant stomach is practically still in the fish stage, and to the morphologist the *a priori* suggestion would be extremely strong, simply from a study of its form and relative development, that the organism required a purely carnivorous diet and the flesh material in a highly soluble form. There has probably been no single improvement in dietetics which has resulted in greater increase of comfort and vigor to the human race than the practical recognition of this morphological fact, that the human infant is emphatically and essentially carnivorous in its tastes and can live and flourish properly on no other kind of food. The abolition of "paps" and gruels and puddings of every sort and description, and the substitution of an absolute milk diet, or, if this fails, meat juices, during the first six months of life, has done simply wonders for the comfort and nutrition of the race, and been the chief factor in the enormous lowering of infant mortality.

As the child grows the salivary glands begin to secrete, and as the jaws become armed with teeth, food that requires some grinding is indicated, and the stomach adjusts itself along with the other organs. The change from this to the adult stage is largely one of increase in capacity or development of fundus, and the assumption of a somewhat more horizontal or, more accurately, oblique position. So far as its form is concerned, it is apparently simply a sort of swelling or sagging process which is taking place. In fact, as we watch it, the conviction forces itself upon us that it is to a large degree a sort of storage pouch or receptacle in which food may be retained, moistened, churned somewhat, and then passed on for real digestion and absorption to the remaining part of the canal. And we are told nowadays by some of our advanced physiologists that the stomach is little better than a sort of alimentary tub and churn. It is true the fluid which is poured out for the moistening of the food contains certain amounts of pepsin and hydrochloric acid, but that, instead of being a rare feat, is now known to be a comparatively common power of the not merely animal but vegetable tissue. The layer of cells which surround the germ in a grain of corn, when sprouting is about to occur, attack the tough cellulose and fibrous husk which cover the grain by means of a fluid which they secrete which is rich in pepsin. The cells about the base of the "eye" of the potato use the same weapon in dissolving the cellulose coating of the starchy grains, in order that they may be made available for the nutrition of the young sprout. And even such lowly organized forms as some of the fungi attack the tissue of the plants upon which they feed by means of a pepsin ferment which is secreted about the tips of their hyphæ.

The chemical changes which take place in the food while in the stomach are of unquestioned importance, yet we can not help thinking that the mechanical change, such as the softening and churning and subdividing, are much more so. And if this is true, as its history of growth would imply, it is at bottom essentially a muscular organ rather than a glandular one. Certain it is that the greater part of the true digestive process and all absorption take place in the intestine, with its much more powerful juices. Digestion can be perfectly carried out where the stomach is completely excluded by ligature or otherwise, and the ingenious researches of Meltzer and others have recently shown us that where the pylorus is firmly ligated there is not only no food absorption but not even water absorption takes place in the stomach, so that even such potent and diffusible poisons as strychnine and atropine can be introduced into such a stomach and retained there for hours, without producing any toxic effects upon the system. And this view of the situation is supported in a really remarkable manner by the latest results of our gastric therapeutics. The use of the lavage tube, the test meal, and the gastroscope have revealed the fact that the most serious and unmanageable defect which can occur in the organ is loss of motor power either through distention or otherwise. So long as the stomach is able to empty its contents into the intestine with reasonable promptness, digestion may be well performed and nutrition maintained in spite of most serious defects in the quality and quantity of gastric ferments. In fact, the most characteristic and fundamental feature of the majority of the chronic forms of gastric disturbances is this inability on the part of the stomach to empty itself, and little or no permanent benefit will be derived from treatment until this defect is remedied if possible. As in any other muscular organ, the loss of motor power is the most serious defect which can occur in it. But will our history enable us to throw any light upon a reason or method of loss of this motor power? We think it will, and that in quite a direct manner. In the vast majority of cases this loss of motor power is attended, and, indeed, often caused by an excessive distention of the walls of the organ, either by the retained food or by the gases developing from its fermentation, so as to stretch and thin out not only the muscular, but even the mucous and glandular coat to the point of atrophy. Now this fact of distention is no new thing. In fact, it is simply a continuation of the very same process of enlargement, in response to the needs of the organism and the nature of the food, which we have been tracing from the simplest forms of the organ. Like nearly all other diseases, it is a healthy process gone wrong, a beneficial change carried to excess and become harmful in the process. In fact, to use a very loose simile, a carnivorous human stomach has undergone enlargement to a most herbivorous size. And, indeed, in some cases the parallel may be a very close one, for under the use of certain kinds of food in healthy individuals, or by narrowing of the pylorus, the stomach may be greatly enlarged without any loss of motor power, undergo a genuine hypertrophy in fact, instead of a dilatation, just as may its sister organ, the heart. The enlargement is the same in either case, but in the one case the organ has responded to the stimulus and its muscular wall kept pace with the increase in size, while in the other case it has been conquered by the stimulus, and its power to distend has proved its ruin.

By comparison with the lower animals, we think it would be safe to say that the dangers of abnormal distention are in close proportion to the extent to which normal distention has already occurred. In man, gastric distention is fairly common, much more so than was at one time supposed. In the dog, either gastric or intestinal distention is extremely rare, and colics of all sorts cut but a comparatively small figure in his diseases. In the herbivora, on the other hand, a pathologic degree of distention is extremely common, as the well-known frequency and fatality of colic in horses and cattle attest. In horses, where the stomach is single and has not reached such a marked degree of development, these may occur either as gastric or colonic attacks; but in horned cattle, where the normal distention of the stomach has reached its highest pitch, their most frequent site is in the huge paunch or rumen. So acute may these distentions be that rupture of the organ and consequent death from peritonitis is no infrequent termination. Indeed, in many cases the upward pressure upon the diaphragm is so great as to produce severe and fatal dyspnœa, and even in rare instances rupture of the muscle itself.

There are two other pathological tendencies of the tract which, I can not help thinking, have some ancestral basis, remote as it may seem. One is the extraordinary power possessed by the walls of the stomach of both secreting and absorbing gases of various kinds, particularly air and carbon dioxide. Only a part of the gases present in many cases of gastric distention can be accounted for by the fermentation of the food contents, and our therapeutists were for a long time puzzled to account for their presence and for the rapidity with which they would be renewed after their escape had been arranged for. They were driven to the conclusion, in fact, that the mucous membrane of the stomach must have the power of absorbing the gases from the blood in its walls. And when we remember that the primitive alimentary tract performed in all the other stages of its development, previous to the appearance of gills, the functions not only of digestion and absorption, but also of respiration, and that the mammalian lung is simply a part of the common alimentary tract set apart for this special purpose, we can, I think, gain some notion of how easy it would be for any part of the tube to resume this ancestral function. And when we further remember that this power of respiring gases may exercise itself upon the sulphureted hydrogen and other poisonous products of intestinal putrefaction, we can readily understand the influence, in the production of anæmia and toxæmia of every description, exerted by stagnation of the food contents.

The other is that extraordinary sympathy which still seems to exist between the alimentary mucous membrane and the epithelium of the body surface, from which it was originally pouched or tucked in, if we may use the expression. This is most commonly shown in some forms of the common "cold," or coryza, in which marked disturbances of the gastric and intestinal mucous membrane, and even of the epithelium of the liver and pancreas derived therefrom, follow a marked interference with the cutaneous circulation. The so-called bilious attacks which follow a cold, or the "gastric" form of *la grippe,* are cases in point. A striking illustration is the appearance of urea in the stomach in Bright's disease, in some cases of which a diagnosis of renal inadequacy can be made merely from a chemical examination of the vomited matters. And I can not help thinking that those mysterious ulcers of the duodenum, which are so apt to occur after extensive burns of the surface, are an aberrant expression of this same primeval sympathy.

When we come to consider the diseases of the intestine, both small and large, the relation between history and tendencies is less obvious, partly because specialization has been less marked and for the most part only in one direction. But even here there seems to be some sort of connection between the direction taken by the ancestral tendency of change and the form of disturbance to which it is most liable. Almost the whole change which has taken place in the small intestine, from the straight single tube, consists of an increase in length accompanied by a corresponding increase in the number of coils and loops, and it is this very tendency which we find to be a peculiar source of danger in this region. The various twists and knots which are so liable to occur in this part of the bowel are simply an exaggeration of the coiling tendency which its normal history has shown; and the tremendous propulsive power which its great increase in length and comparatively small increase in calibre has necessitated (a motor power which will be appreciated and highly valued by any one who has attempted to clean of their contents ten or fifteen coils of a cat's intestine), this powerful vermicular action is the essential factor in the production of that most serious and distressing condition, intussusception. The bowel literally turns that energy which is developed in propelling the food along its enormously extended tract to swallowing a part of itself.

In the large intestine we have a totally different state of affairs. Here the change has been one of enlargement and a peculiar form of sacculation, not for the purpose of extracting nutritive material from the food contents—for its power in this respect is, of course, extremely limited—but mainly for the purpose of extracting the liquid portions of the mass in order to prevent too great loss of fluid from the body. This would at least suggest itself as a reason why the large intestine does not develop until after the aquatic habits have been abandoned, and its consequent late appearance in the ancestral family tree. Now the commonest disturbance to which this part of the alimentary canal is liable is an excessive and exaggerated delay and hardening of the fæces in its interior, which results in that probably most common of all morbid conditions, constipation. Here, again, we have a pathologic condition which is simply an excess of a normal one. Constipation, with all the toxæmic symptoms which follow in its train, is simply an excessive performance of the normal draining and drying function of the colon. One of the forms which occurs in infants (first described and explained by Jacobi) is peculiarly interesting, inasmuch as it appears to be due solely to the late appearance of this part of the gut, of which we have already spoken, which results in its not having assumed the proper arched position in the abdomen at the time of birth. Instead of making a complete arch around the sides, as it were, of the abdominal cavity, it lies in folds obliquely across it, and hence is liable to obstruction at the acute angles which easily occur in its course. Children otherwise perfectly healthy may have great difficulty in securing anything like a regular movement of the bowels on account simply of this mechanically disadvantageous position of the gut. But if a little assistance is given by unirritating enemas, and laxatives are carefully avoided, the process of development continues, the gut is pulled up into the proper adult position, and the constipation totally disappears in from one to five months' time.

We have thus seen that throughout almost the entire length of the canal the relations between function and structure are tolerably direct and point in a fairly uniform manner in the direction of the principal disease tendencies. There is, however, one extremely interesting region where no such connection can apparently be traced between function and structure, and yet which is of great importance as a site of disease. I refer to the cæco-appendix, which has attained such "bad eminence" in pathological circles during the last ten or fifteen years. At this point the connection between structure and function appears to break down entirely, for the simple reason that we can hardly conceive of any useful function which is performed by such a singular and irrational modification of the tube. Here, however, is an illustration of the advantages of the comparative and ancestral method; for as soon as we begin to compare the singular state of affairs in the human species with the various developments of this region in the other mammalia, the problem is at least set in a fair way toward solution. That the problem is one of the highest practical importance and interest will be readily admitted when we remember that most recent authorities upon medicine—as, for instance, Osler and Strümpell—declare appendicitis to be the commonest inflammatory condition found in the abdominal cavity under thirty years of age, and the commonest cause of peritonitis in males. The first thing that strikes us about the cæcum is its extraordinary variability in different species. It appears to even excel the stomach in this respect, and upon careful study is found in most cases to be governed in its development by very much the same principles as the latter organ. In its degenerate human form it seems incapable of any useful function, but when we discover it, as in some of the marsupials and herbivorous rodents, reaching a length double that of the entire body, or a capacity nearly equal to that of the rest of the alimentary canal, we begin to see that after all it is another of Nature's numerous methods of increasing the amount of internal surface for digestive or absorptive purposes. Its variation, according to the nature of the food, is not as direct and uniform as is that of the stomach, and, as Flower has pointed out, it appears to undergo development in inverse ratio to that of the other organ. That is to say, it will appear as if Nature increased the absorptive surface of the canal by either distending the stomach or by dilating and elongating a blind pouch toward the lower part of the canal. In the hare family, for instance, in which, though herbivora, the stomach is small and simple, the cæcum reaches a perfectly enormous development, more in capacity than in length. In most of the ungulate herbivora the cæcum, though large in calibre and well-rounded, and with none of those "stigmata of degeneration" which are so characteristic of the human form, is, compared with the rest of the tract, and particularly with the huge compound stomach, an insignificant part of the food tube. In the carnivora, the rodents, and the bats it is in the vast majority of species so small and imperfect in its development as to be in many cases listed in technical descriptions as "absent," although this is never absolutely the case. Here, of course, it is simply in keeping with the general directness and simplicity of the entire food tube, and it might perhaps be questioned whether this did not represent the primitive type of the organ, of which the intermediate human and anthropoid stages and the extreme herbivorous ones were a later and fuller development. But from the fact that the cæcum is long and well developed in several of the vertebrate groups below the mammalia, is especially well marked in the marsupials, and generally better developed in the more primitive members of each of the great mammalian orders than in the more highly specialized forms, excepting, of course, these be herbivorous in their habits, the general opinion among morphologists is that the carnivorous cæcum is to be regarded as an extremely reduced form of a somewhat fuller ancestral type. Indeed, as has been shown by my colleague Dr. A. C. Kerr (to whose kindness I am greatly indebted in my study of this problem, he having placed his collection of over five hundred mammalian and avian cæca entirely at my disposal), in the dog almost all stages of its recession can be seen, even including in one case the development of an apparent appendix. Now, how does the actual embryonic development of this region in the human species correspond with its general mammalian history? At the earliest appearance of the cæcum during fœtal life, we find it to be a well-developed tubular prolongation from the gut, of nearly three times its relative length in the adult, and with equal calibre with the rest of the gut to its extreme tip. As growth proceeds, however, this relation rapidly changes. The distal two thirds of the diverticulum is arrested in its development or even atrophies somewhat, and at about the sixth month the cæco-appendix has become reduced to a structure of about the shape of an old-fashioned tobacco pipe, the stem of which represents the appendix and the bowl the cæcum. From this point the disproportion between the two parts steadily increases, the anterior aspect of the pipe bowl bulges downward and outward, pushing the stem upward and backward, until finally the appendix, instead of being directly continuous with the lumen of the cæcum, comes to occupy its well-known adult position at the upper and inner aspect of its posterior wall. That it was originally a direct continuation of the larger cavity is shown even in adult life by the fact that each one of the three longitudinal muscular bands can be traced directly back to the base of the appendix, and this fact is used as a practical guide to the appendix by surgeons in operating upon it. The adult relation is attained at birth or shortly after, but the process does not stop here. Since our attention has been called to it by our surgical friends, careful investigations of the condition of the appendix have been made by Ribbert and others, in the dissecting room and upon the post-mortem table, with the extremely interesting result of finding that the atrophy actually continues to such a degree that the canal of the process becomes either partially or totally closed in something like twenty-five per cent. of all cases before the thirty-fifth year, while after the fortieth year this percentage rises rapidly until by the age of forty-five it is found to be occluded in fifty per cent. of all cases, and by the seventieth year in sixty per cent. The shorter and smaller the appendix, the larger was found to be the proportion of occlusion.

What suggestions, then, may we gather from this review of the history of the appendix as to its probable disease liabilities? The conclusion, I think, is almost irresistible that we have in the human appendix a structure which is not only ancestrally degenerate, intermediate, as it were, between the voluminous and well-nourished cæcum of our more herbivorous ancestors and the safe simplicity of the carnivorous cæcum, but is also actually undergoing further atrophy during the lifetime of the individual both before and after birth; and we would therefore upon morphological grounds expect to find it a point of least resistance in the food tube and a frequent starting-point of inflammatory disturbances of every description. And such, of course, is its well-known surgical and medical history. There is no need to call in the aid of foreign bodies or concretions of any sort, fæcal or otherwise. Any inflammation which sweeps along the food tube may find in the appendix the tinder which alone is needed for its spark to set up a general conflagration. And we are beginning to discover that not only in acute infections is this weakness manifested, but that also in protracted septic and other febrile disturbances attended by great lowering of the general nutrition the appendix becomes the seat of gangrene, as that point of the abdominal cavity whose nutrition is least thoroughly kept up. And this view of the ancestral nature of appendicitis appears to be sustained by such data as can be gathered from comparative medicine. In cattle, where the appendix or, more correctly, the cæcum, although not relatively large, is still well developed and well nourished, this condition is almost unknown, although it may be the site of inflammation caused by the formation of calcareous concretions (enteroliths), and the same appears to be true of the large and well-developed cæcum of the hare family. In fact, in those classes where it is still well developed and comparatively functional it appears to be nearly free from disease. In the carnivora, on the other hand, the same is true, but for an opposite reason. Here not only has the distal or "appendix" part completely disappeared, but even the cæcal pouch is shrunken to a mere bay-window-like "bulge" upon the wall of the large intestine. In fact, it might almost be described as simply the scar which was left by the occlusion of the pouch. Even this slight crease is occasionally a site of irritation in lions and tigers kept in captivity, apparently from the lodging of bones and other irritating materials in this angle of the tube, setting up a perityphlitis, which, however, is seldom fatal. In the main, however, the records of canine and feline medicine generally would support the statement that the carnivora are almost exempt from inflammations of this region, on account of the completeness with which they have succeeded in getting rid of this troublesome pouch, and it is, we think, evident that a process tending in this direction is going on in our own species, and, although its progress is unfortunately attended by numerous casualties, yet there is hope for the future. We may never develop wings, but we shall probably one day get rid of our appendix, a consummation which, though less poetic, would be of even greater practical value.

In conclusion, I would like briefly to call your attention to one other disease of the tube whose location appears to me to suggest some connection with its developmental history. I refer to carcinoma. If we were to select five points in the food tube which were either individually or ancestrally the sites of the greatest variations in development, whose vital balance was, so to speak, the least stable of any parts of the alimentary canal, we should be led to select the pylorus, the cæco-appendix, the œsophagus, and the oral and anal orifices of the tube. In the first-mentioned region we have not only the point of transition from the secretive epithelium of the stomach to the absorptive epithelium of the intestine, but also a well-developed sphincter and the traces of a second gastric chamber, the so-called *antrum pylori*, which are often well marked in the human stomach. The variations in the shape of this region are quite considerable, and when we remember that this is the region which was ancestrally the site of the old "gastric mill" of our crustacean and insect ancestry, of which our pyloric valve is a degenerate descendant, and which has undergone such tremendous specialization in the well-known gizzard of birds, we can see why this region is to be regarded as one of well-marked ancestral instability. The status of the ileo-cæcal region we have already discussed. Nor is this limited to the cæcum proper, for the entire colon is a neomorph, and the formative disturbance probably extended some little distance up what is now the ileum. In the case of the lips and the rectum we have a membrane which has been changed from a cutaneous to a mucous at a comparatively recent period, and in the former situation it is the very dividing line between the two classes of cells which appears to be a special point of attack, a veritable border land or frontier where, to use a figure of speech, the "thin red line" of cells seem to be in doubt whether they are going to form cutaneous epithelium and produce hair and sweat glands or become moist and translucent and produce mucin and mucous glands. Like every "border land," it is a frequent site of disturbances, and particularly of that rebellion of the cells called cancer. In the œsophagus we have the site of those frequently occurring dilatations known as crops, which are present in so many of the lower forms of life, and even in some of the higher mammalia we find this part of the canal singularly liable to form pouches and undergo distention and impaction with dry and irritating food materials, as in the horse, for instance. These pouchlike distentions, known to veterinarians as "*jabots*," becoming filled with chaff or meal, will cause serious trouble from their pressure upon the windpipe, the carotids, and even encroach upon the lumen of the gullet itself, so that they have to be emptied by vigorous external manipulation, or, failing this, even by surgical incision.

Now, if we were to draw up a list of the parts of the food tube most liable to cancerous growth, we should find ourselves confronted with precisely the same regions which have attracted our attention as sites of special ancestral instability, and that the frequency of cancer is in almost direct relation to the degree of this variability. The most profoundly unstable part of the tube is the pyloric region, and this stands far at the head of all the others in the frequency of cancerous processes, various authors estimating that from twenty-one to forty-five per cent. of all cases of cancer attacking the canal occur at this point. Next in order of instability, although this is perhaps more individual than ancestral, would come the tongue, lips, and rectum; and these, again, will stand at the head of the remaining parts of the canal in their liability to carcinomatous change. Next comes the ileocæcal region, and this is stated by Osler to be the third commonest site of cancer in the food tube, and last of all the œsophagus. These, of course, may be nothing more than accidental coincidences, but the parallelism is singularly close; and when we further add the facts of the tremendous liability of the pyloric region of the stomach to ulcerative processes, nearly forty per cent. of all gastric ulcers occurring in its comparatively limited area, and the similar susceptibility of the ileo-cæcal region to the perforating ulcers of typhoid (Finney reports that eighty per cent. of all cases will be found within ten inches of the ileo-cæcal valve), the suggestion becomes a strong one, that there is some sort of connection between biologic instability and pathologic susceptibility.

These suggestions, both from their morphologic and their pathological aspects, are of but the crudest and vaguest character, and intended more to suggest lines of possible value for future inquiry than to add anything to the body of our actual definite knowledge of the subject. This can only be done by a careful and laborious extension to pathology of that comparative method which has won such brilliant triumphs in the realm of anatomy and biology. The services and interest not only of human pathologists but also of zoologists, veterinarians, botanists, and agriculturists must be enlisted in this work, and my main object in bringing these crude suggestions together is to direct the attention of the profession to what seem to me the rich possibilities of research in this field, and to elicit suggestions as to the best lines along which it might be carried out. Personally, I am firmly of the opinion that the line between health and disease in the physical world, as between good and evil in the moral, is purely a relative one; that such a thing as an essentially and intrinsically morbid process has not yet been discovered. Disease is simply life out of place, vital energy gone wrong; and our true function is not to "eradicate" or destroy it, but to endeavor to direct this energy back into its normal channels, in which process we have the cooperation of all the forces of Nature.

The Buffalo Academy of Medicine.—The programme for the last meeting of the Section in Pathology, on Tuesday evening, September 21st, included the following titles: Some Observations on the Physiology of the Stomach—Report of X-Ray Exhibition, by Dr. A. L. Benedict; and Abnormal Cell Development in Plants and Animals—a Study in Comparative Pathology, by Miss Mary Forster, of Newnham College, England.

The University of Georgia.—Dr. Charles Minor Blackford, Jr., has resigned the position of instructor in normal and pathological histology and bacteriology in the Atlanta Medical College, to accept the newly made professorship of pathology in the University of Georgia, of which Augusta is the seat of the medical department.

CERTAIN PHASES OF PULMONARY CONSUMPTION
VIEWED FROM THE STANDPOINT OF THE THEORY OF DEVELOPMENT.

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THE modern development theory not only sheds lustre on the origin and growth of living beings, but it bids fair to illuminate many dark spots in the pathology of disease. It has already shown us that different organs mature at different life periods, and when this is coupled with the pathological law that all organs before maturation or during active development either in structure or in function offer a diminished degree of resistance to disease, we obtain the following working formula: Owing to natural conditions, the various organs of the body are more liable to disease at one age-period than at another.

This interesting and inviting field of study has a most important bearing on the issues which underlie the question of the ætiology of pulmonary consumption, and I had for some time intended to discuss this subject, and am now led to do so by some ideas which were expressed by Dr. Woods Hutchinson, of Buffalo, New York, in a paper on Some Deformities of the Chest in the Light of its Ancestry and Development, which he read before the recent meeting of the American Medical Association in Philadelphia. So far as I am able to gather from an abstract of this paper, it essays to deal with at least two fundamental biological points as they stand related to pulmonary consumption. The first is that in the course of this disease the human chest loses its flat form and becomes round—thus reverting to its ancestral or quadrupedal type; and the second is that tuberculosis attacks the lungs more frequently than any other organ in the body because these organs have the least resistance to disease in virtue of being the youngest portion of the body from a biological standpoint. With the first proposition I do not intend to deal at present, but believe that it will not stand the test of critical investigation in its entirety; the second, however, I believe to be so far at variance with the scientific status of biological teaching that I think it requires an immediate reply.

There are two questions involved here, the first of which is, Are the lungs the youngest organs in the body in a biological sense? and the second is, Is it true that tuberculosis attacks the lungs at the age-period when they offer the least resistance to disease? These questions I shall now endeavor to solve in the briefest possible manner. I think it is conceded that the three original germ layers bear entirely distinct relations to the various tissues of the fully developed body. Thus, from the upper or outer layer proceed those cells which form the outer skin of the body, the brain, spinal cord, and the organs of sensation; from the lower or inner germ layer spring the alimentary tract with all its appendages—the lungs, liver, salivary glands, etc.; while from the middle layer proceed the heart, blood, blood-vessels, muscles, bones, etc. Now, while it is true that all the organs of the body spring from these three germ layers, it does not follow that all the organs coming from the same layer are of the same age, for, as Gegenbaur says, epithelium, which comes from the outer layer, represents the oldest form of tissue, and yet the brain and nervous system, as well as the organs of special sense, come from the same layer, and are really among the youngest form of tissue both phylogenetically and ontogenetically. The same is true of other organs.

Organic development advances from the simple to the complex, and hence among the very earliest structural changes is a differentiation of the organism into a cutaneous covering and a digestive tract. From the latter proceed the respiratory organs. The heart and the vascular system appear before the respiratory organs. The special senses come somewhat later, and finally are developed the brain and the higher nerve centres. It will be seen, therefore, that the lungs, instead of being the youngest organs, biologically speaking, are really among the oldest, and that the brain and higher nerve centres are really the latest and most recent structural forms of development in the human body.

In the next place it is in order to inquire whether the lungs are most liable to phthisis at the time of life when their resistance to disease is the lowest, or, in other words, when they are maturing, or undergoing active structural or functional change. I have already referred to the pathological principle according to which an organ is most prone to disease during any of these periods. In illustration of this it may be said that infantile life is more subject to sudden febrile disturbance because there is greater irritability and instability of the heat-regulating centres at this period; that convulsions are also more prone to evolve during this time of life because the convulsive centres are more impressible, and hence more easily unbalanced; that the valves of the heart are more liable to be deranged by the rheumatic poison before adult life, because these structures are more impressible to this influence in the young than they are in the old; that strumous affections implicate different joints at different ages on account of the varying nutritional and developmental changes which occur in these structures at different times, etc.

When we come to seek the period of life during which the lungs undergo the most active developmental changes it will probably be found that some of the most important of these occur at and during a few years after birth, and that after this period these organs remain in a comparatively stable condition both in structure and in function. The principal changes which occur in the time referred to are the beginning of the active process of respiration, and a transformation of the alveolar epithelium into a permanent pavement form. Indeed, the alveolar texture appears to be of such a hybrid character that some authorities think they have reason for stating it to be of endothelial origin. However this may be, it is perfectly clear that this structural transformation induces greater irritability in the bronchial and alveolar epithelium, and renders childhood more susceptible to catarrhal and inflammatory diseases of the chest. It is not necessary to say that this is amply borne out by clinical experience.

On the other hand, there is overwhelming evidence to show that pulmonary phthisis is neither a special disease of childhood nor of any other age when the lungs undergo structural or functional modification of any kind; for the period of greatest liability to this disease is between twenty and thirty years—many years after the lungs have perfectly matured and have reached the fullest measure of biological growth and function. It really seems as though the lungs are not inherently strongly predisposed to tubercle, or else this tendency would become active at the time when they are subject to such structural and functional modification as has been noted above, and thus be in accord with the behavior of other organs in this respect. Thus, according to James (*Pulmonary Phthisis*, p. 11), bone is most liable to tubercle in the following order, according to age: "Of the lower limb, the hip is affected the earliest; next comes the ankle, and lastly the knee. Turning now to the ages at which in these various articulations bone-growth and development are completed, we find it to occur in the lower limb, first in the hip, next in the ankle, and lastly in the knee." The same also seems to be true of tubercle of the brain. This affection being comparatively infrequent during the first year of infancy, probably reaches its maximum frequency during the third and fourth years. This period also corresponds with that of maximum brain growth, for during this time brain development goes on most actively, the growth of this organ being practically completed before the seventh year. Some other organs behave in a similar manner.

Now, what is the reason that the lungs do not fall a prey to phthisis when they are undergoing the most active structural and functional development, and when they are naturally and inherently most vulnerable to other disease, and why is this event postponed until long after this period? Are the lungs an exception to this rule? They are in their relation to the phthisical process, for it will be seen that in the great majority of cases of phthisis these organs are not primarily at fault, but that their diseased condition is merely the superficial expression of a disorder farther down, and that this deeper error lies in the nervous system. In dealing with phthisis we must always bear in mind the intimate relationship that exists between the central nervous system and the lungs, that the latter are supplied by the largest and most vital nerve of the body—the pneumogastric—and that they are liable to disease coming from a disturbed and morbid influence of the nervous system. One reason why the lungs become more liable to phthisis between twenty and thirty years is on account of a profound functional strain of the nervous system at this period. The relations of man now become completely changed, for the time has arrived when he is forced to face new and untried problems. He is removed from paternal care and protection and left to struggle for his own existence in the battle of life. He is burdened with family cares and duties. He is exposed to overwork, business troubles, anxiety, perplexities, grief, disappointment, vicious habits, indulgences, intemperance, syphilis, and many other pernicious conditions. Then, again, as Clouston observes (*Neuroses of Development*): "All the higher emotional, intellectual, imaginative, volitional qualities of the brain arise between fourteen and twenty-five, and the absolutely new and tremendously intense feelings connected with reproduction arise *de novo* during that time. All that is worth doing or feeling in life is done after that time. It is during this long period of gradual coming to perfection of the nerve cell that its hereditary influences for good or evil come most into visible play. I think it may be taken as a rule with few exceptions that the tissues, the organs, and the functions which are of slow development are those which hereditary evil tendencies are most apt to influence."

This is also the age-period which is most liable to insanity. Of nine thousand five hundred and forty-three cases of insanity treated in the Pennsylvania Hospital for the Insane, from its inception to 1890, by far the largest number became insane between twenty and thirty years (see my paper, Phthisis, Insanity, and other Neuroses, *Medical News*, July 16, 1892). Other hospital reports for the insane give corroborative testimony on this point. Now, on superficial observation, insanity and phthisis have nothing in common; yet on deeper investigation it will be found that one is the perfect analogue of the other, as will be seen from the following: They both occur at the same age-period; they do not protect against, but predispose to subsequent attacks; they both tend to extinguish the family; insanity is very liable to be followed by phthisis in the individual; the family which is burdened by one is also liable to produce the other; they are both closely related in personal and family history to idiocy, hysteria, epilepsy, asthma, and to other diseases of the brain and spinal cord; they are both produced by syphilis, alcohol, mercury, overwork, business vicissitudes, domestic trouble, grief, disappointment, and excesses of all sorts—in fact, by any agent or influence which vitiates the brain or the nervous system; that the idiotic, the insane, the epileptic, the hysterical, the asthmatic, and the members of the families of these, are from three to eight times more prone to become phthisical than persons who are not burdened in the same way.

Phthisis does not, therefore, show a greater predilection for the lungs at this time because they represent the youngest biological tissue in the body (which they certainly do not), neither solely because the brain and higher nerve centres are the youngest tissues (which they really are), but because the latter are subjected to an extraordinary strain during an age-period when they are undergoing rapid functional development—the pulmonary disease being merely the superficial expression of a deeper-seated disease in the nervous system,* the same as insanity, which is almost a complete analogue of phthisis, is the symptomatic manifestation of some underlying defect in the brain cells.

A SIMPLE METHOD OF SECURING A MEASURED QUANTITY OF BLOOD FOR MAKING THE QUANTITATIVE TYPHOID REACTION.

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It is now the opinion of all observers that cessation of motion and agglutination of the bacteria, resulting from the contact of typhoid bacilli and typhoid serum, are inconclusive for diagnostic purposes unless the reaction follows the combination of a *suitable culture* and a *definite quantity of serum.*

The thorough investigations of Wyatt Johnston and his associates in Montreal have shown that reliable reactions can only be secured when cultures of an ordinarily virulent typhoid bacillus, grown in an alkaline medium for about twenty-four hours, are employed.

The writer prefers fresh agar-agar cultures, distributed throughout sterile clean water, rather than bouillon cultures, because of the larger number of bacteria in the former, the consequently greater number of agglutinations formed, and the readiness with which they are found upon microscopic examination. It is necessary, however, to make a microscopic examination of the diluted culture before adding the serum or blood, in order to be sure that there are no natural clumps of bacteria present to simulate the specific agglutinations. This is of great importance. The clumps of bacilli are more apt to occur in cultures grown upon fresh, moist agar-agar than upon that that has been kept for a short time and had its surface become partially dried. The chief difficulty experienced in making the test seems, at present, to reside in the preparation of the blood in accurate dilution—*i.e.*, securing it in measured amounts.

The original method of Widal, to collect about five cubic centimetres of blood in a test tube by the introduction of a hypodermic needle into a vein, is a rather more serious and disturbing operation than most patients care to undergo for purposes of diagnosis.

Blood dried upon paper, as suggested by Johnston, or upon glass, while extremely convenient for transportation, is not susceptible of accurate dilution for quantitative estimation.

Cabot has successfully made dilutions with a medicine dropper, by using one drop of blood and as many drops of culture dropped from the same instrument as were necessary for the desired dilution. This method seems to be very practical, but can only be employed at the bedside, or where it is not necessary to keep or transport the blood.

In the absence of a satisfactory method of securing definite small quantities of blood for immediate or subsequent use, the writer was led to make some experiments with capillary tubes to determine their possible value for the purpose.

It is a well-known physical phenomenon that in clean capillary tubes fluids are drawn by capillary attraction to a height varying according to the diameter of the tube and the density of the fluid. In tubes of equal diameter, the height of the column is invariably the same.

In spite of the varying heights of the columns, the amount of fluid entering a tube of large calibre is greater in weight and volume than that entering a very fine tube.

The first experiments were made with a series of tubes varying in diameter from a horsehair to a toothpick. Such tubes can be made by heating a piece of ordinary glass tubing, such as is to be found in every laboratory, in a Bunsen flame for a few minutes until it becomes red and soft, removing the glass from the flame, and then pulling upon the ends steadily and slowly until the tube is drawn out to the desired diameter. The errors to be avoided in making the tubes will be heating too much and making the glass too soft, drawing out the tube while still in the flame, and drawing too rapidly. The result of these erroneous methods will be that the tubes will be much shorter and finer than is desired. A few moments' practice will show just how the manipulation shall be done to secure the best tubes.

A large number of tubes of all possible calibre were used. Each was cut into lengths of about four inches, and each piece weighed upon a delicate balance and marked with its weight. After weighing, each tube was touched to the surface of clean water for a moment or two until the contained column of liquid had attained its maximum height, then placed upon the balance and weighed again to determine the quantity of water taken up. There was, of course, considerable variation—tubes into which the column of water rose an inch containing much more than those into which it rose three or four inches. The fact was, however, established that tubes of about the same diameter showed almost no variation in the quantity of liquid contained.

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* For my other contributions to this subject, see *Pulmonary Consumption a Nervous Disease*, published by George S. Davis, Detroit, 1891; Toxicosis of the Nervous System as a Cause of Consumption, *Journal of Nervous and Mental Disease*, November, 1896; Increase of Insanity and Consumption among the Negro Population of the South since the War, *Boston Medical and Surgical Journal*, June 3, 1897.

The next series of experiments, of which the details are wearying, were made to determine whether the method was applicable to blood. As would be expected, less blood than water entered the tube; the heavier liquid entered more sluggishly, but followed the law that in tubes of equal diameter the column had the same length and an equal weight. So little was the difference in the length of the column and the weight of the contained blood in tubes recognized by the eye to have uniform calibre that the writer has no hesitation in recommending an application of the capillary tube for securing small measured quantities of blood for the specific typhoid tests and similar experiments.

The application of the method is simple and consists in—

1. Accurately weighing the amount of blood that enters a capillary tube of a size arbitrarily selected as a standard.
2. The manufacture of a large number of tubes of the same size.
3. The dilution of the known quantity of blood contained in the tube with a measured quantity of the bouillon or diluted agar-agar culture of the bacillus.

The standard tube adopted by the writer had a diameter about equal to the E string of a violin. A larger or smaller tube would have done quite as well. In such a tube the column of blood rises about an inch and weighs about .018 gramme. As personal equation in judging size is a marked source of error, the experimenter must work his own standard tube and not adopt that which has just been given. It is important to know the length of the column that has a certain weight, because, as each tube is not separately measured and graduated, the two chief means of avoiding error will be (1) to have the tubes as nearly as possible of equal diameter, and (2) to prove them to be so by observing that the columns of fluid they contain when used are of the same length, rejecting one after another all the tubes which seem to the eye to have the proper calibre, but in which the column is obviously longer or shorter than that of the original tube.

Keeping the standard tube before him as a guide, and using a Bunsen flame—which is better than a blowpipe, because it does not heat the glass so rapidly and make it so soft—the experimenter prepares one hundred or more capillary tubes as nearly as possible of the same size as that of the standardized tube. All the irregular sizes are rejected, and the suitable sizes cut into portions about three inches long. These pieces, which should number several hundred (it is economy to make a large number at a time), are now carefully sorted, being compared with the standard tube at both ends, and thrown away if too large or too small at either end. It is best to sort the tubes twice on different days or have several different persons go over them all. Of course, some tubes of quite different calibre from that which appears will, in spite of all precautions, remain in the bundle, but this is no serious matter, because at the last moment the height of the column to which the blood rises can be taken as a proof of actual variation. It may be true that no two of the tubes have exactly—absolutely—the same contents, but when the given precautions are taken the variation will be so small as to make no significant error in the results obtained.

The use of the tubes is extremely simple. The ordinary puncture is made in the lobule of the ear or the finger tips of the patient, and one end of one of the tubes touched to the surface of the oozing drop and held there until the blood ceases to rise higher in the tube. So little blood is required that a number of tubes can be filled with the blood from the single puncture if desired. The blood in the tube coagulates in a few minutes and can be allowed to dry, or can be drawn to the central portion of the tube and sealed in by fusing the ends in a flame if it be desired to keep it moist.

When the agglutination reaction is to be made the blood should not be blown out of the tube, as the quantity contained is small and a considerably large relative quantity will remain in the tube. A better method, adopted by the writer, is to crush the tube in a small crucible or other diminutive vessel and dissolve it directly in the requisite culture from which the drops used for the "hanging drop" are then taken.

The proper proportionate amount of culture is measured with a finely graduated pipette (graduated to thousandths of a cubic centimetre), the calculation according to the standard tube of the writer's experiments being: Dilution 1 : 10 = 0.153 c. c. of the culture; dilution 1 : 100 = 1.53 c. c. of the culture; dilution 1 : 1,000 = 15.3 c. c. of the culture.

The now recognized specific reaction is supposed to take place in dilutions of 1 : 50, which would require 0.71 + c. c. of the bouillon or diluted agar culture.

The culture was measured into the little crucible, the blood-containing portion of the capillary tube broken from the rest and dropped in, and subsequently crushed to minute fragments and stirred about with a clean, rounded, glass rod, and a drop of the mixture placed as a "hanging drop" upon the stage of a microscope and examined for the agglutinations.

The method is much more simple than it seems. Aside from the balance, with which most laboratories are provided, no other instruments or apparatus are required than a Bunsen burner, a graduated pipette, some glass tubing, a crucible, and a piece of glass rod.

The advantages are the simplicity, the very considerable accuracy, the lack of any necessary operation upon the patient, the readiness with which blood enough for a number of experiments can be obtained from a single puncture, the ease with which the permanent preservation of the serum can be accomplished, and the applicability of the method where the blood is to be transported.

For transportation the capillary tube with dried contents, or sealed ends and wet contents, can be inclosed in an ordinary piece of tubing closed at the ends with cotton plugs.

DIPHTHERIA ANTITOXINE.*

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But little attention was given by the profession to the subject of diphtheria antitoxine before the meeting of the Eighth International Congress of Hygiene and Demography at Budapest, Hungary, in September, 1894, when Roux presented a paper reporting five hundred cases treated with antitoxine. Since then the remedy has been extensively used and reported upon in every civilized country. Recommended by the great body of laboratory workers, indorsed by thousands of physicians both in hospital and private practice, and welcomed by the common sense of the people at large, antitoxine has become the most widely indorsed and most generally employed of all remedies. Though confronted from the first by the fiercest opposition and materially retarded by the unbridled enthusiasm of some of its advocates, diphtheria antitoxine has within the brief period of three years proved itself to be specific in the full sense of that term.

Emmett Holt, in his new text-book on *Diseases of Infancy and Childhood*, says: "Antitoxine is a specific remedy for experimental diphtheria in animals. Experience is now sufficient to justify the statement that it is specific in man, and just in the degree in which we can fulfill the conditions which are essential in experimental diphtheria" (folio 999). And again: "Gratifying as were the earlier results with the serum treatment, they have been constantly improving, and there is every reason to believe that, with larger experience both in the preparation and use of antitoxine, still better results will yet be reached. Certainly there is no remedy for any disease that has more testimony in its favor than has now diphtheria antitoxine" (folio 1000). These statements, which are fully indorsed by all the leading authorities, it will be noted, were made prior to the completion of the rich experience had with the remedy last winter, and before the results of the supplementary collective investigation of the American Pædiatric Association were made known, of which the *Medical News* of May 15, 1897, said editorially: "There can be no longer any doubt as to the value of the antitoxine treatment in all forms of diphtheria. The highest commendation should be accorded the American Pædiatric Association for so persistently adding line upon line, precept upon precept, until a verdict of *proved* has been established beyond peradventure. The final word has been spoken, a fact is before us."

The above-mentioned collective investigation showed that under antitoxine treatment seventy-three per cent. of operative cases of laryngeal diphtheria ended in recovery, and that only thirty-nine per cent. of cases so treated required operation. Under calomel treatment only twenty-seven per cent. of the patients recovered, and ninety per cent. required intubation.

It is interesting to note how many eminent men in the profession and prominent medical magazines, after openly opposing antitoxine or treating it with stolid indifference, have joined the ranks of its advocates. Among many others Virchow "yielded to the brute force of figures," deeming it ignoble to face facts in brutish obstinacy; and Jacobi, who for twenty years has been a leading American authority on diphtheria, now finds in the failure to employ antitoxine in all cases of diphtheria a heavy shade of criminal neglect. The *Medical Record*, commenting upon the first report of the American Pædiatric Association, July 4, 1896, said: "The great majority of the profession may properly continue the use of antitoxine, but the great silent, careful, powerful jury of the profession is not yet ready with its final verdict." Commenting upon the second report of the American Pædiatric Association, May 15, 1897, the *Record* said: "The report is worthy of close study. Laryngeal diphtheria requiring operative interference furnishes the best test of the method of treatment. As the report mentions, before the days of antitoxine the best statistics could show only twenty-seven per cent. recovery. Other factors remaining constant, the use of antitoxine has carried the percentage from twenty-seven per cent. recovery up over the divide till it now reads twenty-seven per cent. mortality, nearly threefold increase in recoveries."

The deliberations of the American Medical Association, in its recent convention in Philadelphia, served to show how generally antitoxine is employed in the United States. The experiences of the last nine months, both in the employment of the remedy and the collective study of results, have been such, and the evidence in its favor so overwhelmingly conclusive, that in a body of medical men, such as convened at Philadelphia, the physician who shows an aversion to the remedy has his motive for so doing and his sincerity immediately put in question. Every legitimate objection to the remedy is fully overcome in the employment of concentrated antitoxine, which was introduced during the spring of 1896 by the H. K. Mulford Company, Philadelphia, and which is now generally indorsed. The question to raise is how to employ the remedy in order to obtain the largest possible results. It is this phase of the present status of the serum treatment of diphtheria that is of most vital importance. The superiority of the antitoxine treatment of diphtheria over all other treatments can no longer be reasonably questioned, while the methods by which the fullest possible specific effects of the remedy may be secured are not everywhere well appreciated. The supplementary collective investigation showed that many physicians, rendered timid by the glaring headlines in yellow journalism, administered doses having from one tenth to one half the required number of antitoxic units. The results were proportionately unsatisfactory. The indications are that when a reliable product is employed generally in proper doses, repeated if need be within twelve hours, the general mortality from diphtheria will be reduced to less than four per cent. and that of laryngeal diphtheria to less than ten per cent.

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* Read before the New Jersey State Medical Society, at Atlantic City, June 23, 1897.

Regarding the opposition, it has been well said that there are to-day in the whole civilized world not more than three or four active opponents of the antitoxine treatment of diphtheria whose names were known to the profession before the introduction of antitoxine. While these have raised a great hue and cry, it is well to remember that they do not constitute the medical profession nor create truth. There can be no virtue in opposition which persists in the face of impregnable figures and established facts. That the fear of untoward results from an injection of antitoxine which some physicians still entertain is utterly groundless, is a patent fact in view of the countless injections already made in all parts of the civilized world, the number aggregating probably upward of two millions. In this large number it is admitted that five deaths occurred which could not be satisfactorily explained. They can not be proved, on the other hand, to have been caused by the antitoxine. In all the extensive laboratory researches nothing has yet been discovered which could possibly or probably contaminate the antitoxic serum and result in sudden death when administered. In the five cases referred to, in three of which immunizing doses were given, untoward symptoms appeared immediately upon injection of part or all of the serum, and death followed in from five to eight minutes. Virile germs, ptomaines, etc., even when nurtured in artificial media, are not capable of such results in small animals, much less in human beings. The cases simply remain unexplained for want of sufficient data. The remote cause was not recognized, and death was incidental to the injection—fear, probably, being the exciting cause.

Sudden deaths have always been a possible outcome of the diphtheritic infection, and, inasmuch as the severity of the infection is not always appreciated, it may be presumed that in some of these instances the disease was not given the full share of blame. In the three instances cited causes other than the antitoxic serum must be sought for satisfactory explanations. In the early days of hypodermic medication sudden deaths were attributed to the use of the needle. Even to this day some communities will not tolerate the employment of hypodermic syringes. Quinine had its reported fatalities when first introduced. The coal-tar derivatives, now so extensively employed, have been credited with deaths, so have morphine, ether, chloroform, alcohol, and many other standard remedies. It is questionable whether one of these medicaments, within the prescribed doses, has a record nearly as clean as that of diphtheria antitoxine—viz., more than a million injections and only five deaths—which, to say the most, can not be satisfactorily explained. If it be conceded that there is an element of risk in the employment of antitoxine, this must be placed at one two-thousandth of one per cent., while the gain in recoveries ranges from twenty-five to thirty per cent. over all older treatments. If it is possible to give too large a dose of antitoxine, this limit has not yet been discovered. Rosenthal has given as high as six thousand units in a single injection. In one case which he reported, fifteen thousand units, and in another sixteen thousand five hundred units were administered during the continuance of the disease without untoward effects. Every case was followed by recovery. Dr. Sanor * reports the case of an infant nine days old successfully treated with concentrated antitoxine, "potent," twelve hundred and fifty units being used within twenty-four hours—five hundred at 10 A. M., five hundred at 6 P. M., and two hundred and fifty at 9 A. M. The case was grave; the throat and nose were full of exudate. The infant began to nurse at 2 P. M.

Within the prescribed range of doses diphtheria antitoxine may now be administered with the same degree of confidence that characterizes our employment of any of twenty-five leading therapeutic agents, including quinine, morphine, alcohol, strychnine, etc. Idiosyncrasies to these drugs are to be expected. If idiosyncrasies to antitoxine exist, their effects are confined to an occasional urticaria excited by an unripened serum. From the first, as the powers and limitation of antitoxine became better appreciated, the dose recommended was increased, and the interval in repetition decreased. As indicated in the recent report of the American Pædiatric Association, the further decrease in the mortality rate from diphtheria will depend upon the more general employment of concentrated antitoxines reasonably early, without fear, and in doses of one thousand or two thousand units, repeated when need be within ten or twelve hours. The best adjustment of dose at present recognized is briefly summed up as follows: In all ordinary cases of pharyngeal type give one thousand units immediately upon making the clinical diagnosis. If treatment is inaugurated late, or the type is laryngeal, or the case is one of membranous croup, give two thousand units. In every instance, if the disease is not

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arrested or the indications are that sufficient antitoxine has not been administered, repeat the dose, or give double the dose, within twelve hours.

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BENEFICIAL EFFECTS OF THE WITHDRAWAL OF BROMIDES IN THE TREATMENT OF EPILEPSY.

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There are few cases of epilepsy that do not at one time or another undergo treatment with the bromides. In fact, the bromides constitute in the hands of most practitioners the sole remedy employed. They have, because of their undoubted usefulness in many cases, superseded most other drugs as an antispasmodic. The unfortunate epileptic is too often dismissed as a case it is hopeless to attempt to cure. He is nevertheless given the bromide treatment and advised to continue it indefinitely. This the patient does, and as a result becomes after a time saturated with the drug, and presents sooner or later the symptoms of bromine intoxication—viz., bromide acne, chronic ulcers, varying degrees of mental impairment verging toward dementia, etc.

While the bromides are perhaps the most useful remedy we can employ as an antispasmodic in many cases of epilepsy, their exhibition in every case is not advisable. With a considerable number of patients the bromides are entirely ineffectual; with no small number, too, very serious symptoms, such as acute bromism, increase of seizures, and even insanity, supervene upon their use. In many of the cases where actual good is done by the bromides in reducing the frequency and severity of the attacks, the concomitant symptoms are such that it becomes questionable whether the remedy be not after all worse than the disease. The writer makes it a practice, therefore, to exhibit the bromides with caution, and never to employ them until the series of less harmful but often quite as efficacious remedies for epilepsy have been tried in vain.

But since the practice has been to give and continue the bromides for years in most cases of epilepsy, and since it is a chronic and generally rather hopeless disorder, nearly all of the cases that come under the writer's observation for the first time, in private practice, at clinics, or at Craig Colony, are already more or less saturated with the bromides.

Now it has been generally taught that it is dangerous to give up the bromides in such cases suddenly, and it is a matter of common belief that the sudden withdrawal of the bromides is certain to produce status epilepticus, or at least to increase the severity and frequency of the epileptic seizures. It is the object of this brief paper to show that this assumption is far from true. There are cases in which sudden withdrawal of the bromides produces the status epilepticus, and increases the number of attacks. But such cases are not common. They are in the minority. It is the aim of the writer to demonstrate that the contrary is the rule: that sudden or even gradual reduction of the bromides in these long-saturated cases ameliorates the condition of the patient in almost every instance, that it decreases to a remarkable extent the number of attacks, that it lessens their severity, that it improves the general physical health, and that it re-establishes to a considerable degree memory and intelligence.

Let us examine a few of many instances that have come under the writer's observation:

Case I.—H. T., a woman, aged twenty-two years; convulsions in infancy. Idiopathic epilepsy from the age of thirteen years on. Treated with bromides most of the time until she came under the writer's charge. For two years and a half previously the dose of bromide had been sixty grains daily. The *grand-mal* attacks had rather increased in frequency year by year. During 1892 she had nineteen attacks of *grand mal.* The number of *grand-mal* seizures for the three months immediately preceding the withdrawal of bromides was respectively 5, 8, and 5. The bromides were suddenly stopped. The number of attacks for the twelve months immediately succeeding the cutting off of bromides was respectively 1, 0, 1, 0, 2, 0, 1, 0, 1, 1, 0, 0. She has had about one seizure each year for the three years succeeding this to the present time. She has never taken bromides since. All the bad effects of bromism—the acne, gastric disorder, hebetude—cleared away like magic. She is as bright, healthy, cheerful, and intelligent as any girl of her own age and station.

Case II.—G. P., a boy, aged fourteen years; idiopathic epilepsy for five years. Three or four attacks of *grand mal* nightly on heavy bromide dosing for several years. Severe chronic gastric catarrh, acne, considerable dementia. Bromides withdrawn at once. Immediate diminution in frequency of attacks to one every three or four nights. Marked improvement in intelligence and general health.

Case III.—B. C., a girl, aged eighteen years; idiopathic epilepsy since two years of age. Under heroic bromide treatment two to three attacks of *grand mal* daily. There were mental stupor, emaciation, heavily furred tongue, and offensive breath. On withdrawal of bromides attacks were reduced for the past two years to four to ten in a month. Great gain in weight, in general health, and in mental capacity.

Case IV.—J. D., a girl, aged nineteen years; first attack of *grand mal* in August, 1896, said to have been due to slight sunstroke, though there seem to have been some *petit-mal* seizures at the age of ten or eleven. Idiopathic epilepsy. Attacks increased in frequency, although she was pretty constantly on bromide treatment. For six months previously to coming into the writer's hands she was steadily given bromide treatment by a neurologist in a neighboring city—*i. e.*, until March 2, 1897. The record of seizures for the two months before the immediate withdrawal of all bromides was as follows:

Jan. 6, one attack.
" 13, nine attacks.
" 14, two "
" 28, seven "
} Total for month, 19 attacks of *grand mal.*

Feb. 3, one attack.
" 21, seven attacks.
" 28, fourteen attacks.
} Total for month, 22 attacks of *grand mal.*

The gastro-intestinal catarrh, furred tongue, and fœtid breath were marked, the bromide acne most distressing, and the mental dullness and despondency extreme. There is no record of the number of seizures previous to January 1st, but she was growing constantly worse. In the four months since the sudden and complete cutting off of the bromides she has had one very light attack a month to the present date.

The above-cited cases have been selected here and there from the writer's private records and could be readily duplicated several times, but they suffice to show the significance of the title of this paper. Testimony from another source will serve better to corroborate and emphasize the facts above given. Dr. L. Pierce Clark, first assistant physician at Craig Colony, has kindly sent the writer some notes on the experience at that institution for epileptics, where the observations and records are exceptionally well taken and preserved. These notes are as follows:

A number of epileptics admitted to Craig Colony for care and treatment were suffering, at the time of their admission, from well-marked bromism. The majority of them were incapable of caring for themselves because of great physical infirmity produced by large doses of bromide, which had been almost continuously administered to them for many years.

One of these patients had taken as much as a hundred and sixty grains of bromide in a day, and still had from seven to eight seizures in twenty-four hours. As soon as the bromide was reduced to fifteen grains in a day this patient showed remarkable physical and mental improvement and his seizures became much less frequent, and, finally, at the end of two months, ceased entirely. In numerous cases, not given below, similar beneficial effects were noticed by the nurse, without such marked benefit taking place as in the cases given.

In some cases where the exhibition of bromides had been enormously excessive there was a tendency to frequent attacks if the bromides were suddenly withdrawn. But if, instead of immediately stopping the doses of bromide, they were rapidly reduced, all disagreeable symptoms were obviated.

It is always very difficult to state how much mental depression has ever been caused by the administration of bromides, because the injurious effects of large doses of the drug are very similar to the mental impairment produced by epilepsy. But probably the evil effects of bromide are much more frequent and certain than most authors state.

In epileptics who are addicted to physical violence at the time of or following one of their attacks, the administration of bromide in large doses seems almost imperative, notwithstanding the fact that such large doses are almost sure to have a more or less dangerous effect upon a good mentality.

The following short abstracts from the histories of several epileptics admitted to Craig Colony, and at present under care and treatment there, are given to illustrate that a more or less rapid withdrawal of the use of bromide in large doses was not attended by injurious results, but, on the contrary, by marked improvement in the patient's condition, physically and mentally. The cases selected were those of patients who had been given very large doses of bromide for a long period of time prior to their admission to the colony.

CASE V.—C. L., aged forty-seven years; epileptic for thirty-nine years. For a number of months prior to his admission to the colony he had been taking large doses of bromide (sixty to eighty grains three times a day). After his admission the bromide was reduced to fifteen grains a day, which resulted in the patient gaining several pounds in weight, and his seizures running in the following order for several months: 18, 18, 8, 11, 8, 5, 1. He was discharged as improved, to return home at the earnest solicitation of himself and relatives.

CASE VI.—V. S., aged twenty-six years; epileptic for eighteen years; supposed to have been caused by scarlet fever. At the time of his admission to the colony the patient had been taking a hundred and sixty grains of bromide a day. He was having, on an average, five or six attacks a day. During the first month after his admission he had a hundred and ten attacks. The bromide was reduced to seventeen grains a day. During the second month he had ninety-eight seizures; third month, thirteen; fourth month, one; and he has had no attack since, a period of fifteen months. The rapid improvement in physical and mental condition of this patient is almost miraculous. From a condition of almost total helplessness he has improved so markedly that he is able to do a full day's work at manual labor.

CASE VII.—J. C., aged twenty-eight years; epileptic for twenty years. Prior to his admission patient had been taking a hundred and forty grains of bromide a day. He was suffering from extreme bromism, and was so feeble physically that it was necessary for the nurses to assist him from place to place. The bromide was entirely withdrawn, and tonics and special diet prescribed. Patient has gained twelve pounds in weight and, from having eighteen to twenty attacks a month, he has been having, during the months following his admission, attacks as follows: 9, 16, 11, 9, 5, 8, 4, 3.

CASE VIII.—W. V., aged thirty-nine years; epileptic for thirty-five years. He has customarily taken a hundred to a hundred and fifty grains of bromide a day. At the time of admission patient was suffering from severe malnutrition and general effects of large doses of bromide, the same as in Case VII. As soon as admitted the bromide was reduced to fifteen grains a day. The seizures, which numbered at first from eighteen to twenty a month, diminished in frequency as follows: 10, 17, 5, 7, 4, 3.

CASE IX.—J. M., aged twenty-three years; epileptic for thirteen years. Prior to her admission to the colony the patient had been taking from thirty to forty grains of bromide three times a day. She was suffering from severe bromism, which showed itself in her general anæmic condition and poor bodily health. As soon as admitted the patient's medicine was reduced to fifteen grains of bromide a day. Her attacks after admission ran as follows: 20, 13, 6, 5, 4, and are now almost entirely of the *petit-mal* type, followed by little or no mental depression.

Case X.—C. H., aged twenty-one years; epileptic for seven years. Prior to her admission to the colony she had been having several attacks each week, and was suffering from extreme bromism. Had been taking thirty to forty grains of bromide three times a day. As soon as admitted patient was reduced to ten grains of bromide a day. Tonics and special diet were prescribed. Since admission her attacks by months have occurred as follows: 17, 6, 3, 2, 1, and 2.

Case XI.—H. S., aged thirty-nine years; epileptic for six years. For the last six months prior to admission patient had on an average one attack a month, and had taken forty grains of bromide three times a day. He was admitted to the colony after he had been free from attacks for three weeks and was daily expecting to have another. His dose of bromide was reduced to twelve grains a day. Patient has had no seizure since admission, a period of about ten months.

The eleven examples above given are sufficiently clear to demonstrate the fact that the withdrawal of the bromides in cases of epilepsy long under bromide treatment is generally followed by distinct amelioration in all of the symptoms. In some of the cases the improvement is startling. Were one to try some new remedy or method of treatment in such cases, how readily might he be deceived as to the value of his therapeutic measures!

Suppose, for instance, he were to cut the eye muscles, a procedure in vogue in certain quarters, but tabooed, so far as I can learn, by all reputable neurologists, what surprisingly satisfactory results might be reported! Such reports have been made, and the withdrawal of the bromides (to show that no treatment had been carried on to mask the results of the operative procedure) has been openly boasted of in said reports. These cases then serve to corroborate the statements intended to be made by the writer, and should be added to the list above given. The truth is that, under the circumstances, no fair deduction can be drawn from any case of epilepsy apparently improved by any method of treatment whatever when the patient has been for long periods under the bromide treatment and the bromides are withdrawn. In order to give scientific value to any new therapeutic measure in epilepsy, it will be necessary to show that the patient has not been subjected to the bromides for a long time before the experiment in the new treatment has been undertaken.

60 West Fiftieth Street

The St. Louis Medical Society of Missouri.—At the meeting of Saturday evening, September 18th, the special order was a paper on The Hygiene of the Child's Voice, by Dr. F. C. Ewing.

Therapeutical Notes.

Chalybeate Purgatives.—Dr. C. E. Williams (*American Therapist*, August, 1897) suggests the following preparations:

(1.) ℞ Ferratin, Sodium bicarbonate, } each ..	2 drachms;
Powdered rhubarb..........	4 "
Oil of fennel...............	30 drops.

M. S.: Dose, a teaspoonful.

(2.) ℞ Ferratin..............	3 drachms;
Extract of aloes............	14 grains;
Compound extract of rhubarb	9 "

M. Divide into thirty tablets. S.: One or two to be taken twice a day.

Lactophenine in the Treatment of Chorea Minor.—A writer in the September number of *Pædiatrics* gives the following:

(1.) ℞ Lactophenine, Quinine hydrobromide, } each..	$2\frac{1}{4}$ grains.

M. One such powder to be taken three times a day in the case of children from five to ten years old.

(2.) ℞ Lactophenine, Quinine hydrobromide, } each.	12 grains;
Cacao butter................	150 "

M. Make a suppository. One such suppository to be used at bedtime in the case of children from ten to fifteen years old.

A Mixture for Bronchial Asthma.—The *Prager medicinische Wochenschrift* (cited in the *Centralblatt für die gesammte Therapie* for September) gives the following formula:

℞ Sodium iodide, Tincture of stramonium, } each	75 to 180 grains;
Extract of licorice...............	60 "
Syrup of squill..................	450 "
Distilled water..................	2,750 "

M. S.: A tablespoonful three or four times a day.

An Antiseptic Varnish.—The Quebec *Revue médicale* for September 8th attributes the following formula to Nicaise:

℞ Powdered lac................	900 grains;
Balsam of Tolu..............	75 "
Thymol......................	22 "
Alcohol......................	750 "
Ordinary ether...............	1,500 "

M. Filter.

An Antiseptic Powder for Suppurating Wounds.—The Quebec *Revue médicale* for September 8th gives this formula as Schwartz's:

℞ Iodoform, Salol, Bismuth subnitrate, Charcoal, Cinchona, Benzoin, }	equal parts.

M.

An Expectorant Mixture.—Espagne (*Semaine médicale; Progrès médical*, September 4, 1897) is credited with the following formula:

℞ Syrup of ipecac..............	8 to 10 parts;
Syrup of Tolu, Brandy or rum, } each	20 "
Potassium bromide...............	1 part.
Linden water....................	75 parts.

M. S.: A tablespoonful every two hours.

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EPICONDYLALGIA.

An encyclopædic article on this subject, by Floersheim, appears in the *Journal des praticiens* for September 4th, based on various publications by Remak, Bernhardt, Molle, Couderc, Féré, and Rivière. It seems that it was Féré who gave the name of *épicondylalgie* to a painful affection seated mainly in the region of the epicondyle of the humerus and radiating over the outer surface of the forearm and hand, the movements of which it impedes. It manifests itself at the time of voluntary movements, and generally disappears or becomes mitigated during repose. Remak appears to have been the first to observe it, and Bernhardt the first to describe it.

Analogous to the "professional" cramps in its ætiology, epicondylalgia shows itself generally in men, especially performers on stringed musical instruments and persons who write a great deal; it is met with, however, in all sorts of individuals who do prolonged work with the hands. According to Molle, it always presents itself in one way: The elbow is semiflexed and everted, and the antero-external region of the forearm is the seat of rather sharp pains, which come on in the course of movements and persist until rest is taken. Certain movements are particularly painful, for example, those of prehension with the arm extended.

There are three symptoms, says Floersheim, that are sufficient to distinguish this affection from all others pertaining to the same part. 1. A bony pain, with a point of tenderness that has to be sought for, since the patient never explains its situation exactly; it is over the epicondyle and often over the head of the radius. 2. A muscular pain affecting the muscles that extend the forearm or take part in extension combined with prehension. This pain is rarely spontaneous; it is at its height at the moment a movement is willed, and it involves a weakening of the limb, only an apparent weakening, however, for it is not accompanied by atrophy and is due only to the pain. 3. Impairment of functional power due to the same cause. As there are no other physical signs, such as deformity, redness, swelling, or paralysis, the diagnosis rests on those that have been mentioned.

Floersheim mentions the term epicondylar neuralgia, but he recognizes, as Féré does, that the affection is not a true neuralgia; it can not, he says, be dependent on any alteration of a nerve, and, for that matter, its pathogenesis is still obscure. It has been considered as a pain due to muscular exhaustion, analogous to what is observed in muscles that have been strained or even to tendinous or muscular rupture. Floersheim thinks the most plausible hypothesis is that of a simple tenositis, analogous to crepitant tenositis, that is, not accompanied by redness, swelling, or deformity.

The affection itself is assuredly benign, says Floersheim, but, as, in addition to the pain, it involves impairment of functional power and has been known to last for six months, it is necessary to ward off these accidents by prompt treatment. Prolonged rest, douching with sulphurous waters, painting with tincture of iodine, and massage constitute the entire treatment. It has sometimes been necessary, he adds, for the patient to abstain from his ordinary occupation when a continuance of it has led to a relapse.

THE NIGHT TERRORS OF CHILDREN.

Pavor nocturnus has lately been made the subject of comment by L. Braun (*Jahrbuch für Kinderheilkunde*, 1896; *Revue mensuelle des maladies de l'enfance*, September, 1897), who thinks that, whether in its idiopathic or in its symptomatic form, it is nothing but a manifestation of neurasthenia. According to all authors, he says, it is observed chiefly in nervous, irritable, impressible children who have this in common with neurasthenics, that their sleep is bad, being light and very much disturbed. Under these conditions, that is, with an ill-balanced nervous system, they are thrown into an exalted state of the imaginative faculties by the least excitement, one that would have no effect on a healthy subject, but in them suffices to provoke dreams which, as in neurasthenics, have frightful objects or events for their features. The excitation which serves to set these faculties of the brain at work may be either peripheral, such as a sound, a touch, or the like, or central, that is to say, resulting from the continued action of products of tissue change on the nervous system during sleep.

Another point of identity with neurasthenia is furnished by the community of certain symptoms observed in neurasthenics as well as in children who are subject to pavor nocturnus. These symptoms are palpitation, as observed by Wertheimer and Henoch, headache, as noted by Henoch, and a proneness to become fatigued speedily. In a certain number of cases the children show also the marks of hysteria; they are hypochondriacal. In some cases the ultimate occurrence of epilepsy has been observed; the author has seen an instance of this himself. Ollivier considered that night terrors were a manifestation of hysteria. In fact, says the author, like incontinence of urine and many another trouble, they are a mark of nervousness (*nervosisme*).

The treatment, says the author, is the same as that of neurasthenia, that is to say, dietetic and hygienic. If the child is afraid to go to bed alone, it should on no account be compelled to do so. As palliatives, the bromides and chloral may be employed, but never opium.

MINOR PARAGRAPHS.

FLOWERS IN THE SICK ROOM.

In the August number of the *Zeitschrift für Krankenpflege* it is stated that a London hospital physician recently sent a circular to the physicians of all the London hospitals, advising them to keep a sharp eye on the nature and peculiarities of the flowers brought to the sick. If, he said, certain flowers, and especially flowers in a certain condition, were kept in a sick room, they might well exert on the patient an influence which the physician would have to take into account. It is best, he thinks, to limit the bringing of cut flowers into the sick room, for, if their presence itself is not injurious, the water in which they are kept readily collects germs unless it is changed very often, and becomes foul. Cut flowers, he says, should not be kept longer than a day in the sick room, and it is best to allow only those that are in pots. Artificial flowers must be entirely proscribed; they are very dangerous on account of the dust which always clings to them. Flowers should be chosen with reference to their perfume; those of a strong odor should never be allowed in the sick room. On the other hand, the presence of flowers should in no wise be forbidden, for manifestly the sight of a violet or a forget-me-not may have a pronounced good effect on the patient, and garlands and green twigs should always be kept in hospitals, especially twigs of eucalyptus, which have disinfectant properties.

FATAL HÆMORRHAGE FROM THE REMOVAL OF ADENOID VEGETATIONS.

Schmiegelow (*Monatsschrift für Ohrenheilkunde*, 1897, No. 3; *Centralblatt für Chirurgie*, August 14, 1897) reports a case, not his own, but occurring in the practice of a surgeon who had often done the operation without mishap. The patient was a boy, twelve years old, who showed nothing strikingly abnormal beyond a pronounced adenoid habitus and scrofulous glands in the neck. The operation was done without anæsthesia, and the ordinary Gottstein annular knife was used. Without any warning, a sudden gush of arterial blood issued from the mouth and nose. In spite of prompt tamponing and subcutaneous and intravenous saline injections, death occurred in a few minutes. The internal carotid artery was found to have been opened just in front of its point of entrance into the carotid canal of the pars petrosa ossis temporis. The author supposes that swollen glands had pushed the vessel forward so that the pressure of the knife caused its rupture, for it was not cut.

CYSTITIS DUE TO THE COLON BACILLUS.

Trumpp (*Münchener medicinische Wochenschrift*, 1896, No. 42; *Centralblatt für Gynäkologie*, August 21, 1897) has observed twenty-nine cases of children affected with "colicystitis," by which monstrosity we suppose he means inflammation of the bladder due to its invasion by the *Bacillus coli communis*. As might be expected, the disease is much more common in girls than in boys. It sometimes gives rise to severe general symptoms, and by extension to the kidneys may set up a fatal nephritis.

ABSORPTION FROM THE VAGINA.

Leubuscher and Meuser (*Zeitschrift für praktische Aerzte*, 1897; *Centralblatt für Gynäkologie*, August 28, 1897) have been experimenting with potassium iodide introduced into the vagina, and have found that from eight to fifteen grains have to be used before the urine shows the presence of iodine, which it does in two or three hours. If iodine in solution is used, the reaction is shown sooner and the amount of reclaimable iodine is greater. The absorbent power of the vagina is not increased during pregnancy, but it may be heightened by such solvents as glycerin, by their loosening the connection of the cell layers.

AN EXTRAORDINARY CASE OF SELF-MUTILATION.

At a recent meeting of the Berlin Society of Psychiatry (*Indépendance médicale*, August 25, 1897) Dr. Hirschenberg related the case of a young woman, described as good-looking, who, being affected with melancholia and hallucinations, was taken to an asylum. One night her attendant, who slept in the same room with her, was awakened by a noise. She perceived that the patient had thrown something under the bed; it was one of her eyes, which she had torn out. On examining her, the account goes on to say, one would have said that a regular enucleation had been performed. The wound healed, and the young woman was provided with a glass eye.

OOPHORECTOMY IN OSTEOMALACIA.

Piretti (*Archivio di ostetricia e ginecologia*, June, July, 1896; *Centralblatt für Gynäkologie*, August 14, 1897) relates a case in which he removed the ovaries of a woman who had decided osteomalacia. The operation was performed within a short time after her fourth confinement. In five months she had gained six inches in stature, and a few months later she was able to do laborious household work. The author thinks that the pain of osteomalacia does not always begin in the pelvis and spread to the limbs, but that often the reverse is the case. He believes that some influence proceeding from the genital apparatus produces a malign effect upon the course of the disease—an influence of a nature yet unknown—and that improvement and even a cure may be brought about by simple removal of the ovaries.

ENDOMETRITIS DECIDUALIS GONORRHOICA.

Under this title Maslovsky (*Annales de gynécologie et d'obstétrique,* March, 1897; *British Medical Journal,* August 14, 1897) reports the case of a primipara, twenty-two years old, who was seized with flooding during the ninth month of pregnancy, with severe pains in the hypogastrium. Large clots of old formation were ultimately expelled, and a thick and abundant vaginal discharge set in. He diagnosticated detachment of a portion of the placenta. In three days after the child was born it had conjunctivitis, and gonococci were found in the mother's uterine mucus and in the substance of the placenta, in which there was evidence of an active inflammation affecting the structures impinging on the maternal tissues.

"DOUGLASITIS."

Fresh barbarisms in medical nomenclature are coined almost daily. One of the new ones is "Douglasitis," put forward in the French form of "Douglasite" by Hussenstein (*Gazette hebdomadaire de médecine et de chirurgie,* 1896, No. 92) and translated into German—as a *reductio ad absurdum,* let us hope—by Dr. Rech, of Cologne (*Centralblatt für Gynäkologie,* August 14, 1897), as "Entzündung des Douglas" (inflammation of the Douglas!)

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 21, 1897:

DISEASES.	Week ending Sept. 14.		Week ending Sept. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	6	30	8
Scarlet fever	74	5	66	2
Cerebro-spinal meningitis	0	0	1	0
Measles	37	3	30	3
Diphtheria	130	16	119	20
Croup	7	0	2	1
Tuberculosis	209	112	246	73

Marine-Hospital Service Health Reports.—The following statistics concerning cholera, plague, small-pox, and yellow fever were received in the office of the Marine-Hospital Service during the week ending September 18, 1897:

Cholera.

Bombay, India	Aug. 10–17		143 deaths.
Calcutta, India	Aug. 1–7		8 "
Osaka and Hiogo, Japan	July 31–Aug. 7		1 death.

Plague.

Bombay, India	Aug. 10–17		21 deaths.

Small-pox—United States.

Birmingham, Ala	Sept. 6–13	7 cases.	

Small pox—Foreign.

Bombay, India	Aug. 3–10		1 death
Madras, India	July 31–Aug. 6		2 deaths.
" "	Aug. 7–13		9 "
Madrid, Spain	Aug 24–31		3 "
Para, Brazil	Aug. 21–28		1 death.
Pernambuco, Brazil	June 26–July 3		1 "
" "	July 24–31		1 "
Sagua la Grande, Cuba	Aug. 28–Sept. 4		1 "
St. Petersburg, Russia	Aug. 21–28		7 deaths.
Warsaw, Russia	Aug. 15–21		8 "

Yellow Fever—United States.

Mobile, Ala	Sept. 13	1 case.	
" "	Sept. 14	2 cases.	
" "	Sept. 17	2 "	2 deaths.
New Orleans, La	Sept. 8	1 case,	1 death.
" "	Sept. 12	7 cases.	
" "	Sept. 13	3 "	
" "	Sept. 14	5 "	
" "	Sept. 15	2 "	
" "	Sept 16	2 "	
" "	Sept. 17	9 "	1 death.
Barklay, Miss	Sept. 13	8 "	4 deaths.
" "	Sept. 14	1 case.	
Biloxi, Miss	Sept. 16	15 cases,	1 death.
Edwards, Miss	Sept. 15	12 "	1 "
Ocean Springs, Miss	Sept. 6	4 "	2 deaths.
" "	Sept. 13	1 case.	
" "	Sept. 17	3 cases.	
Pascagoula, Miss	Sept. 10	1 case.	
" "	Sept. 14	1 "	
Perkinston, Miss	Sept. 10	1 "	

Yellow Fever—Foreign.

Cienfuegos, Cuba	Aug. 30–Sept. 5		6 deaths.
Kingston, Jamaica	Aug. 22–28	1 case.	

The Onondaga Medical Society held its quarterly meeting in Syracuse on Tuesday, September 21st. The programme was as follows: Pneumonitis (Ætiology and Pathology, by Dr. W. C. Kellogg, of Syracuse; Symptoms and Differential Diagnosis, by Dr. Dibble, of Pompey; Treatment, by Dr. Wilber, of Fayetteville); Some of the Vagaries of Croupous Pneumonia as seen in Central New York, by Dr. H. L. Elsner, of Syracuse; A Rare Tumor of the Conjunctiva, by Dr. U. H. Brown, of Syracuse; and Echoes of the Twelfth International Medical Congress at Moscow, by Dr. F. O. Donohue, of Syracuse.

The Late Dr. John J. H. Love.—At a regular meeting of the Orange Mountain Medical Society, held September 10, 1897, the following resolutions were adopted:

Resolved, That in the death of our late friend and associate, Dr. John J. H. Love, this society has sustained a loss which we deeply mourn. A constant attendant upon its meetings, its welfare was ever his earnest care. His voice was invariably raised in behalf of progressive medicine and surgery, and his well-weighed opinions were received with that attention and respect which they always merited.

Resolved, That we tender to his family our sincere sympathy in their bereavement, and that a copy of these resolutions be spread upon the minutes of the society and published in the medical press.

William Pierson,
[Signed.] H. B. Whitehore, } *Committee.*
James S. Brown,

The New York State Association of Railway Surgeons.—The seventh annual meeting will be held at the Academy of Medicine, New York, on Tuesday, November 16th, under the presidency of Dr. J. Frank Valentine, chief surgeon of the Long Island Railway.

Changes of Address.—Dr. Alexander Abrams and Dr. Amelia M. Fendler, to No. 153 East Ninety-second Street, New York; Dr. A. Ernest Gallant, to No. 60 West Fifty-sixth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 12 to September 18, 1897:*

Middleton, J. V. D., Lieutenant Colonel and Deputy Surgeon General, Chief Surgeon, Department of California, is granted leave of absence for one month, to take effect on or about the 20th inst., with permission to apply for an extension of one month.

Rafferty, Ogden, Captain and Assistant Surgeon. The leave of absence granted him is extended one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending September 18, 1897:*

La Motte, H., Assistant Surgeon, was placed on the retired list September 15th for physical disability.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Two Weeks ending September 11, 1897.*

Murray, R. D., Surgeon. To assume command of operations at Ocean Springs, Miss. September 7, 1897.

Sawtelle, H. W., Surgeon. Leave of absence granted by department letter of August 10, 1897, revoked, and directed to report at bureau for special duty. September 8, 1897.

Austin, H. W., Surgeon. To report at bureau for special duty. September 9, 1897.

Carter, H. R., Surgeon. To proceed to Ocean Springs, Miss., for special duty. September 6, 1897.

Carmichael, D. A., Surgeon. Leave of absence granted by department letter of August 6, 1897, revoked. September 7, 1897.

Glennan, A. H., Passed Assistant Surgeon. To proceed to Grand Bay, Ala., for special duty. September 9, 1897.

White, J. H., Passed Assistant Surgeon. To report to bureau, September 7, 1897. To proceed to Ocean Springs, Miss., for special duty. September 9, 1897.

Carrington, P. M., Passed Assistant Surgeon. On being relieved by Assistant Surgeon Tabb, to report at bureau for duty. September 10, 1897.

Stoner, J. B., Passed Assistant Surgeon. Directed to proceed to Chicago, Ill., and assume temporary command of service. September 7, 1897.

Guiteras, G. M., Passed Assistant Surgeon. On being relieved by Assistant Surgeon J. B. Greene, to proceed to New Orleans, La., for special duty. September 7, 1897.

Geddings, H. D., Passed Assistant Surgeon. To assume charge of Hygienic Laboratory during the absence of Passed Assistant Surgeon J. J. Kinyoun. September 9, 1897.

Greene, J. B., Assistant Surgeon. To proceed to Key West, Fla., for temporary duty. September 7, 1897.

Tabb, S. R., Assistant Surgeon. To proceed to Evansville, Ind., and assume temporary command of service. September 10, 1897.

Mathewson, H. S., Assistant Surgeon. To rejoin station at San Francisco, Cal. September 8, 1897.

Board Convened.

Board convened to meet at Washington, D. C., September 10, 1897, for the physical examination of candidates for appointment as Second Assistant Engineer in the U. S. Revenue-Cutter Service: Surgeon C. E. Banks, chairman, and Passed Assistant Surgeon G. T. Vaughan, recorder.

Births, Marriages, and Deaths.

Married.

Ives—Piffard.—In New York, on September 4th, Mr. H. Davis Ives and Miss Susan Farnam Piffard, daughter of Dr. Henry G. Piffard.

McLellen—Cowles.—In Mobile, Alabama, on Wednesday, September 8th, Dr. R. L. McLellen, of Tuscumbia, Alabama, and Miss Phœbe F. Cowles.

Pearson—Francis.—In Newport, Rhode Island, on Tuesday, September 14th, the Rev. William Osgood Pearson and Miss Marion D'Aubray Francis, niece of Dr. V. Mott Francis and daughter of the late Dr. Samuel Ward Francis.

Voorhies—Broussard.—In St. Martinsville, Louisiana, on Wednesday, September 15th, Dr. Albert Voorhies, of New Iberia, Louisiana, and Miss Inez Broussard.

Died.

Rendell.—In Brooklyn, on Thursday, September 16th, Dr. John Rendell, in the fifty-eighth year of his age.

Letters to the Editor.

GREEK ANTHROPOLOGY.

Athens, *August 16, 1897.*

To the Editor of the New York Medical Journal:

Sir: One of the noblest buildings of modern times is the Academy of Athens. As is well known, it was built at an expense of five million drachmas, the gift of a rich Greek, Simon G. Sinas. Its features in general, its statues, the gilding, and the colors give an idea of the splendor of classical architecture. All this has been well described and depicted.

However much we may admire this structure and its beauties, we shall find in one of its vast halls a treasure which is of much greater value still, of a value for science, the praise of which can not possibly be exaggerated.

It is a collection of skulls and skeletons found in Greece from all periods—the prehistoric, that is, the period of Mykene, the archaic, the classical, the Roman, and the Christian—and in order to make comparisons with these ancient skulls there are also skulls of our times from different sections of the country.

The founder and conservator of this collection, which is more important than any collection in any other museum in the world, is Dr. Klon Stephanos, the author of a scientific work entitled *La Grèce au point de vue naturel, ethnologique, anthropologique, démographique et médical* (Paris, 1884).

Each and every one of these skulls and other parts of the skeleton have come to light through the official excavations of the Greek Government and the Archæological Society, under the strictest control of men of science who hold themselves responsible to the government and to the world of science. Many of the skulls were taken by Dr. Klon Stephanos himself at the moment of their excavation. The skulls and skeletons are identified as to their origin, that is, the locality where they were found, the surroundings, the grave, the arms, the pottery, the tools, the ornaments—in fact, all that would aid in giving information, nay, conclusive evidence, as to the period to which the skulls or the skeletons belonged.

Here are—an important part of the collection—forty skulls of the prehistoric, of the Mykene period—that is, about the fifteenth century before Christ. Let us see what this number of skulls of this early period signifies. Nine years ago—that is, before this collection was begun—there was not a single Greek skull of this period known to science. Thus the question in regard to the two principal peoples of the most ancient Greece—the Pelasges and the Greeks proper—the question of their being brachycephalous or dolichocephalous, and in what proportion the one or the other form predominated, could by no means be decided. Now, by means of this rich material which presents itself here, it positively and surely may be said: Some of the prehistoric Greeks were mesaticephalous; others were dolichocephalous.

Until the year 1884 there were, in the different collections of Europe, about ninety ancient skulls known, of which twenty-nine belonged to Attica (Nicolucci, Virchow, Broesike, *et al.*), thirty-eight to Asia Minor (twenty-two to Troy [Virchow] and sixteen to Ionia [Zaborowsky]), four to the Greek islands (Quatrefages), and nineteen to southern Italy and Sicily (Nicolucci *et al.*). This shows that there were only thirty-three skulls from Greece, and that from most parts of Greece not a single ancient skull was known to science. There was the impossibility of obtaining reliable results in regard to the most important part of Hellenic ethnography, the impossibility of a comparison of the ancient type with all the later types of Greece.

There are in the collection some skeletons from the oldest Iron age of Greece, the twelfth to the thirteenth century before Christ, found at Eleusis. The objects of art found with these skeletons show the geometric instead of the naturalistic style, the latter being the style of Mykene. Of the Iron age, the museum possesses a number of skeletons of very small children which had been preserved in vases in the necropolis of Ereusis. At this period the mesaticephalous and the brachycephalous types begin to make their appearance; the mesaticephalous type is the predominating one, but the brachycephalous type is frequent.

The number of skulls in the Museum of the University of Athens, from this epoch to the classical period, is very large, also the number of those from the Roman and from the Christian periods. Among the ancient skulls there are series from Eratria, Corinth, and Bœotia (Thespia, Chorsia, and Tanagra). Of the more recent periods, there are series of skulls from Thessaly, Naxos, Amorgos, Attica, Ægina, and Megala.

Dr. Stephanos takes the measurements according to the adopted international method, but besides he records according to his own method, which gives the best results. As much as possible, descriptive terms are avoided; the measurements alone, as a rule, are presented to demonstrate the characteristics. These measurements, as they are written down according to both methods for each skull, show quite an extensive amount of work.

While speaking of measurements, I will state here that Dr. Stephanos has measured more than ten thousand heads of Greek recruits. The results of these measurements are demonstrated on a cephalometric map. On this map the administrative divisions are ignored, since they often are completely neutralized by the result of anthropological researches. Thus, for instance, villages are found far apart which, according to anthropological resemblances, belong together. By lines of different colors the frequency of the different types—hyperbrachycephalic, brachycephalic, mesaticephalic, and dolichocephalic—is demonstrated in a clear manner, and each conglomeration of specimens of the one or the other of these types can be seen at a glance.

The distribution of the frequency of the different colors of eyes and hair is marked on a special map by lines of different color. This latter map is the first of its kind to demonstrate the frequency of these characteristics for each special type.

Dr. Stephanos has improved craniometric methods by demonstrating certain characteristics by means of measurements, and has in this manner given the value of these characteristics in exact mathematical form; he has also complemented the "seriation" method by means of which we are enabled to determine and to distinguish, in all cases in which different types come under consideration, that part which belongs to the one or the other of the different types, and which are the oscillations and the maxima of frequency of each cephalometric character in each series.

But not only has he improved the different craniometric methods, but *on a very large scale* he has devoted himself to the study to give all sorts of elements which can be brought in to aid more or less closely the study of anthropology. In order to carry out this plan, thousands of archives, documents, deeds, ecclesiastical, fiscal, and family papers, especially papers of the Middle Ages, papers never before published, had to be studied, and personal inquiries had to be made in all parts, or among the inhabitants of all parts, of Greece. The results of these researches, comprising every locality of Greece, myriads of names of places, of mountains, of rivers, of families, of words in all the different dialects for things pertaining to agricultural, pastoral, and domestic life, of words from natural history, names for animals and plants, the geographical domain of each phonetic phenomenon of the Greek dialects, are collected in voluminous manuscripts which I have had the pleasure, the delight, to examine.

There is, first, one volume treating of the relation of all facts pertaining to invasions, captures, the captives taken, the transportation of these captives, massacres, and depopulation.

The collection of family names presented in another manuscript has proved to be of great importance, as one example will demonstrate: In parts where there was a great immigration, as in the island of Zante at the end of the fifteenth century, we find hundreds of family names taken from the files of death certificates. We find these names from the time mentioned down to the present time, and can determine the place whence the individuals came and where they settled with a most surprising exactness and certainty.

There is a map adorning the wall of the Anthropological Museum the like of which has never been executed before in any country. It is a map of Greece of the Middle Ages, with the names of all the villages, places, mountains, rivers, etc., as they were found by the extensive researches in history, in chronicles, in archives, in documents, and in papers that I have mentioned.

One volume belonging to Dr. Stephanos's great work of studying the anthropology of his country in a more satisfactory manner and more thoroughly than ever was done anywhere before gives the provincialisms, the dialects, and phonological characters of all the words for things, as already mentioned, relating to agricultural, pastoral, and domestic life, the terms of natural history in the people's language, for instance, of the fauna and flora of Greece in all the different parts of the country, and also the description of ceremonies, especially of weddings, in their variety and peculiarity to locality.

The following copy, which I was allowed to make, will serve to illustrate this part of the work; it will also illustrate some of the wonderful poetical beauties of the Greek dialects and the richness of the language:

Ἰρις, *rainbow*.

δοξάρι, *arch*, Syra, Kymi (Eubœa), Cephalonia, Chimarra (Epirus), Eurytania, etc.

δόξα, *glory* (only an abbreviation of a word, not exactly meaning glory), Mykonos, Andros, Kythnos, Karystos, Levadia, Anachona (Bœotia), Doride, Redestos (Thrace).

θεοδόξαρο, *arch of God*, Nauplia, Lamia.

τῆς γρηᾶς τὸ δοξάρι, *the arch of the old woman*, Leucade (Santa Maura).

δοξάρι τῆς καλόγρηας, *arch of the nun*, Ithaca.

Κεραζώνη, ἡ, *belt of our lady*, Naxia.

κεραζοῦ, Paros, Kythnos.
κερατζοῦ, Siphnos.
κεραζούλα, Sikinos.
νεραντζούλα, Thera, Milos, Amorgos (ἀνεραζούλα ?).

The meaning of these words can not be traced.

῾Αγία ῾Ελένη, Chios, Mitylini (perhaps first ῾Αγιας ῾Ελένης ζώνη, *belt of St. Helen*).

Κερασελένη, Kos.
κερασολένη, Lemnos.
κερασολέ, Ikaria.
κουραλησά, Libision (Asia Minor).
Constructions of which no translation can be given.

Παναγιᾶς τὸ ζωνάρι, *belt of the Blessed Virgin*, Leukadia.
καλογρηᾶς το ζωνάρι, *belt of the nun*, Sparta, Messina, Argolide.
καλογρηας, Elide.
καλογρές, Gortynia.
῾Αγία ζώνη, *the holy belt*, Syra.
Καμάρα, Megata, Keos, Andros, Kypros.
Λάδι καὶ κρασί, oil and wine (because the prophecy is: If the rainbow has much of the green color there will be a rich harvest of olives, and if there is much red there will be a good wine year), Monemnasia.
᾿Ανεμοδόχυς, Mykonos, Tinos.
Μαροῦλι (καμμαροῦλι ?), Magne.
καπιράνι, Sphakia (Crete).

Dr. Stephanos is preparing a bibliography for his own use and also to aid every student of the subject, giving the titles of all books, pamphlets, articles in periodicals, and manuscripts which treat of the anthropology of Greece or may serve for its study.

The books, pamphlets, prints of all kinds, and manuscripts which form the library of the Museum of Anthropology of the University of Athens, it goes without saying, make the most complete collection of its kind. The nucleus of this library was the gift of the celebrated man of science, Alexander Paspatis, and his widow has given a considerable sum for the completion of this library.

If we take a glance over the whole, the great collection and the great work connected with it which present themselves to the scholar, we may well envy the University of Athens, and Greece in general, which are so fortunate as to possess them. Here is a rich material for the study of anthropology, and a master is here to make use of it as nobody ever before has been able to do. It is especially noteworthy that one single man is working on a scale of such immense proportions.

A. Rose, M. D.

Miscellany.

Congenital and Progressive Hypertrophy of the Sublingual Glands in a Newborn Infant.—The following case is related by M. Braquehaye and M. Sabrazès in the *Revue mensuelle des maladies de l'enfance* for September: At birth the child weighed nearly nine pounds, and seemed to be normally constituted. During labor, in order to free the shoulders, which were large, the midwife was obliged to make rather violent tractions on the neck, which caused a slight ecchymotic tint to appear on the skin of the nape of the neck. At the end of several days the physician was called to examine the child, who did not nurse well. He noticed then at the base of the tongue a bilateral tumor, still somewhat undeveloped, which he believed to be a congenital double ranula. The difficulty in nursing increased with the growth of the tumor, and when the child was six months old an operation was advised. Aside from this trouble it suffered from a double inguinal hernia and an umbilical hernia.

On the 19th of September, 1896, when the author saw the child, it presented all the symptoms of athrepsia, and was in such an advanced condition of cachexia that an operation for the herniæ was postponed.

In the mouth there seemed to be a second tongue subjacent to the normal tongue, from which it was separated by a deep groove. In its median part there was a prominent point at the top of which Wharton's two ducts opened side by side like the barrels of a gun; they were permeable. The tumor was depressed on its upper surface, where it formed a cavity molded on the lower surface of the real tongue. The latter was somewhat mobile and greatly swollen; the movements of suction were therefore difficult, and this hindered nursing.

A closer examination of the tumor showed that it was formed of two symmetrical tumors closely connected in front at the median line and occupying the place of the sublingual glands; each was of the size of an almond. In front they were separated by Wharton's ducts; behind they were diverted a little from the median line. The entire tumefaction thus formed was bound by a frenum to the floor of the mouth. The surface of the buccal mucous membrane had not changed color, although it was a little pale. The tumor was flabby and non-fluctuating. The authors thought it probably was a lipoma, and extirpated it at once. On each side an incision was made parallel to the long axis of the tumor, which was yellow and granular, having the appearance of a conglomerate gland. It was surrounded by a cellular sheath, which easily enabled ablation to be done with curved scissors. After its extirpation Wharton's ducts and the ranine veins were plainly distinguished at the bottom of the cavity it had occupied. Each tumor had occupied the place of the corresponding sublingual gland. A part of the mucous membrane which had become prominent was resected, then the borders of the wound were sutured with horsehair. On the 28th of September the points of suture, under which cicatrization had occurred, were removed. On the 2d of November local recovery was still maintained; there remained only a slight induration near the cicatrix. But the general condition was deplorable; the child was emaciated and had not nursed for several days; there were symptoms of the last stage of athrepsia, and there were vomiting and green diarrhœa. Lactic acid was prescribed, although the child was considered to be in a dying condition. However, the authors were very much astonished to hear a few months later from the attending physician that the child was still alive, although it weighed much less than at birth and was a veritable living skeleton.

The tumors were put in alcohol and sent to the laboratory for histological examination, the results of which are given in detail.

The idea that this case was one of a simple congenital hypertrophy of the two sublingual glands, the authors think, may be supported by the coexistence of the lesion with three hernias—and that at the time of birth—their bilateral condition, and the coincidence of congenital malformations which had occurred in two other members of the family. It is true, they say, that the progressive increase in size does not generally accord with the idea of a malformation, and speaks rather in favor of a neoplasm or an inflammation. There was nothing, however, to support the former theory, and, clinically, nothing to indicate an acute inflammation.

The hypothesis of a chronic torpid inflammation of an infectious or toxic nature should, the authors think, be considered. In that condition, they remark, there are indolent hypertrophies which slowly relapse. But at the time when this hypertrophic development of the sublingual glands was ascertained, several days after birth, the child was well developed and showed no diseased condition; the athrepsia did not occur until afterward.

M. Pilliet, to whom the preparations and the sections of the normal glands of a child of the same age were sent, found it equally difficult to come to a conclusion in the matter. In this child no symptom of a nervous disorder had remotely affected the functions of these glands; the trouble could not be attributed to dentition, and the profound cachexia had developed after the tumor, and it had been, without any doubt, caused by the inability of the child to nurse owing to the protuberance which occupied the buccal floor. However, the authors think that two hypotheses are especially plausible: 1. That of a congenital glandular hypertrophy, a true malformation by excess, tending to increase after birth. 2. That of a congenital dull, chronic inflammation connected either with a torpid infection or with an autochthonous or exogenous poisoning from some unknown cause.

Vicarious Menstruation from a Facial Nævus.—The September number of the *Archives of Pœdiatrics* publishes the following case which came under Dr. Bloom's observation: The patient was a young girl whom the author saw when she was a child, at which time he had been consulted about the advisability of removing a vascular nævus from her face, and he had advised waiting. She was brought to the author in March, 1897. The nævus was on the right side of the face, extending down on the nose and involving the upper lip. It was an ordinary vascular nævus such as is frequently seen, but not quite so dark in color as many, with a liberal distribution of dilated blood-vessels. No inconvenience had resulted from the nævus until just before the 23d of March, when suddenly, without injury or undue rubbing, the place began to bleed. It was apparently vicarious menstruation in a sixteen-year-old girl. The bleeding began two days after the appearance of the menses, and lasted until menstruation stopped. Then it stopped suddenly. For two weeks there was no further bleeding; then for a period of two days the nævus again bled. During this time a small teatlike projection appeared on the cheek at about the point at which the bleeding had occurred, and another smaller one on the nose, showing where bleeding had occurred. The fluid discharged was blood, dark in color and thick.

The author ligatured the small teat-like projection, which looked much like a nipple and contained several sore spots. No difficulty was experienced in passing a ligature around it; this was firmly tied, and in five days the projection dropped off. Another and large projection has appeared at the site of the original one. Dr. Bloom considers the case interesting because vicarious menstruation from a nævus in any situation is extremely rare.

Multiple Cutaneous Sarcomata treated by Interstitial Injections of Arsenous Acid.—In the *Normandie médicale* for September 1st M. Nicolle and M. Hébert state that they have observed a case of multiple cutaneous sarcomata, which is a very rare affection of the skin, and said to be incurable. Contrary to the expectations of the authors, a suitable treatment caused the disappearance of the cutaneous tumors in six months. The treatment ceased two months ago, and recovery is still maintained.

At the time of their onset the tumors seemed to be under the skin or localized in the deep layers of the derma. The sarcomatous nodules remained distinctly round. The superficial layers of the skin were not involved in the morbid process until later; the color of the tegument on the whole remained rather pale, and was lacking in certain elements. The spontaneous absorption of a certain number of tumors was observed. Nodules forming a more or less pediculated protuberance at the surface of the skin were never developed; the small tumors which were appreciable only on palpation in the beginning of their existence, formed at their maximum development only a scarcely visible protuberance of subcutaneous appearance rather than cutaneous.

In this case there was nothing to show that the disease extended to the mucous membrane or to the viscera. The spleen and the ganglionic apparatus were not at all hypertrophied, and the affection seemed to have been primarily and exclusively cutaneous.

In the internal treatment, principally arsenic, iodides, belladonna, and ergotine were given. As a local treatment, interstitial injections of camphorated naphthol have been advocated by Reboul; their action consists in causing necrosis and ulceration of the tumors. The number of tumors presented by the patient was sixteen, and they were sufficiently prominent to render it possible to treat each one specially by the interstitial injections.

The authors state that they were led to employ those of arsenous acid because, on the one hand, of all the drugs used by various authors in the treatment of sarcoma, arsenical preparations only seemed to have given some results; on the other hand, because they had been able to ascertain the results obtained by M. François Hue with these preparations in the treatment of epithelial tumors.

In instituting this treatment the authors did so with very little confidence in its success; they hoped by this treatment to arrest perhaps the evolution of certain of the cutaneous tumors, but they did not think the appearance of new tumors could be avoided. However, in six months the patient was completely cured, and this condition still continues. This result, the authors think, should be attributed to the fact that the injections of the acid were made in each one of the small tumors. Regarding the exact influence of the internal treatment, the authors are not prepared to say; it seemed to them that when the patient consented to follow the internal treatment amelioration progressed more rapidly. They think, however, that with the injections alone recovery would have occurred, since this was eventually obtained, although the internal treatment was stopped. The acid seemed to act in two ways: Locally, by causing the destruction of the diseased elements, and, perhaps also, in a general manner by opposing the development of new tumors.

The authors are confident that recovery in this case is radical, nevertheless they feel they can not affirm anything positively.

The Bicyclist's Pulse.—At the International Medical Congress recently held in Moscow, a report of which appears in the *Presse médicale* for September 4th, M. Comte and M. Bourcy stated that their experiments had been made with a steady bicycle, furnished with a peculiar brake which enabled the rider to graduate the resistance at will. By means of electric contact, the number of turns of the pedal, and the seconds, were registered at the same time on a cylinder, also the rhythm of the pulse, the heart, and the respiration. The experiments related particularly to the pulse, which was examined by means of the Hallion-Comte plethysmograph, an instrument which replaced with advantage any other sphygmograph.

From these investigations it resulted that the pulsation of the heart was accelerated in proportion to the increase of work, while, for less work, a rhythm was established in the cardiac beating.

The form of the curve registered proved that, although accelerated, the pulse was at low pressure. It was only artificially, by provoking a vaso-constriction by sensitive excitation, that a pulse at high pressure might be established.

According to these investigations, the maximum amount of work a cyclist should allow himself must be limited, in order not to provoke acceleration of the pulse.

Persistent Vomiting in Infants.—The August number of the *South African Medical Journal* contains an article by Mr. H. Aylmer Dumat on the frequency of this symptom in infants. It is generally due, he thinks, to catarrh of the stomach caused by the absorption, along with some article of diet, of microbes, which, breeding in the stomach, produce an irritant ptomaine. Although the repeated emesis must get rid of much of the irritant, he says, there always is enough left to continue the process.

The aim in treatment should be, not to soothe the gastric mucous membrane, as we do with hydrocyanic acid and with bismuth; not to simply neutralize the acid generally present, as we do with soda; not to counterirritate over the epigastrium, as we do with mustard plasters; all very good remedies in their way, and often useful, but remedies which do not strike at the root of the matter. Our aim should be to wash out and disinfect the stomach.

The author states that he has been long accustomed to order a large draught of warm water, which is generally brought up immediately, and then a mixture of creosote, which acts as an antiseptic and an anodyne to the gastric mucous membrane.

This plan, he says, is successful, but he thinks it would be better to wash out the stomach with an antiseptic first, and then give a simple anodyne to soothe the congestion which is likely to be left behind in the gastric mucous membrane.

He has lately employed with much success a weak solution of lactic acid of the strength of 1 in 240 for infants. The drug is mixed with glycerin in the proportion of four minims of the acid to a drachm of glycerin, and the nurse is instructed to mix a drachm of this solution with fifteen drachms of water. This can be flavored with orange-flower or peppermint water, and makes a not unpleasant drink. Anyhow, thirst being a prominent symptom, the patient readily swallows the two ounces of fluid, and promptly brings up most or all of it, along with a quantity of mucus. The dose is to be repeated within an hour or two. It is again thrown up, in all probability, but this time the washings are not so dirty; and the third and fourth times the washings, if they come up at all, are clean.

Then it is well to give a gastric anodyne, such as a mixture of hydrocyanic acid, bismuth, and chloroform water, and, when two or three doses of this have been retained, to allow a small quantity of broth, barley water, or albuminous water.

Mr. Dumat cites a few cases in which he has employed this treatment, with equally satisfactory results in all.

The Microscope in the Diagnosis of Ringworm.—In an article on the common fungous diseases of the skin, published in the September number of the *Scottish Medical and Surgical Journal*, Dr. N. Norman Walker remarks that the current opinion in regard to the efficacy of the microscope in aiding the diagnosis of ringworm is "one of those half-truths which are more dangerous than whole other things, and unless the physician clearly understands the situation both he and his patients will suffer."

If the disease is present, the microscope should enable the physician to say so with certainty, but in the majority of cases it is not properly used, and the results are very frequently misleading. Dr. Walker thinks that in nine cases out of ten a random examination, such as is commonly practised, will give no information of any value one way or the other. Sometimes it is apparently successful, because ringworm is a very common disease, and there is a well-known optical effect which deceives those not accustomed to the habitual use of the microscope. When a strong alkali is added to any greasy substance an emulsion is formed, and the oil drops have repeatedly been mistaken for spores; ringworm is then diagnosticated. Another common error, says the author, is to mistake minute threads, hairs, and outlines of cells for the mycelium of the fungus.

The proper way, according to Dr. Walker, is as follows: With a lens the suspected spots are searched over in order to find the short black stumps characteristic of the disease. If these are found, the microscope is not required in one case in fifty. But, he says, cases occur in which short hairs are accidentally present in other diseases, and it is well to confirm the diagnosis. If the hairs are mounted, the mistake made in the wrong method will soon be seen; the little stump which has been removed is almost entirely concealed by fungus of the nature of which there can be no doubt. Occasionally broken hairs can not be found, and in such a case the physician must take some of the scales which cover the surface, removing them pretty roughly, and in nearly every case he will find under the microscope tiny fragments of fungus-laden hair entangled in the scab. This method of examination is a rough and ready one, with its uses but its limitation, and for more perfect result it is necessary to turn to staining agents.

Dr. Walker thinks that, of the various methods, none approaches that designed by Mr. Colhoun, although he has tried every published method and followed many ideas of his own. He states that he has made one modification which simplifies the method a little.

The hairs or scales are put on a slide, and a drop of aniline gentian violet or alum gentian violet from 1 to 5 to 100 added. Here it must remain at least five minutes. It is then treated with Gram's solution for three minutes or longer, and dried with blotting-paper. Then a drop of aniline oil, with enough iodine in it to make a dark sherry color, is added, and after a little washing to and fro, it is examined under a low power. In most cases this is enough; but if the specimen is to be preserved, it must be washed in pure aniline and then in xylol before being mounted.

The Action of the X Rays on the Retina.—At a recent meeting of the Académie des sciences, a report of which is published in the *Tribune médicale* for August 25th, M. Bardet stated that up to the present time the action of the X rays on the retina had been denied, although several observers had affirmed that they obtained in certain subjects an impression of light when the eye was placed in the axis of the radiations. It had been said also that the optic media were opaque to these rays, particularly the crystalline lens, and Brandès affirmed that subjects who were operated upon for cataract distinctly experienced an impression of light from the radiations of a Crookes's tube; this fact, said the author, was afterward denied by Darieix.

The author stated that all subjects he had observed experienced a luminous sensation when the eye was in the field of action of a tube lighted by the cathodic light, and that the media, if they presented any resistance, did not prevent the luminous action. In order that the phenomenon might manifest itself, conditions for experimenting must be favorable, as the action was very weak and could not be manifested except in absolute darkness.

The coil and the tube, said M. Bardet, should be placed outside of a black cabinet; in this the observer was seated and perceived the radiations through a board partition, wood being permeable to the X rays. The walls of the cabinet should be hung with thick black curtains, and, above all, should not be painted, as a great many colors became fluorescent when exposed to the X rays.

In these conditions an eye placed at a distance of several centimetres from the field of action of the tube would experience a rather vivid sensation of light, analogous to that experienced by a person before whose closed eyes a lighted candle had been passed. The interruption of the current suppressed the phenomenon, and it was reproduced when the tube was restored.

A large screen and an aluminum plate placed between the eye and the tube caused the sensation of light to persist, but it disappeared if the diaphragm was a plate of iron, copper, or lead; a glass plate greatly diminished the luminosity, but it should be placed outside of the dark cabinet, as otherwise it became fluorescent and rendered the experiment impossible.

On the whole, the sensation of light was weak, but distinct; it was synchronous with the vibrations of the tube. If the axis of this was turned so as to throw the radiations in another direction, the phenomenon disappeared, which fact did not permit of the supposition that the impression was due to the action of the electric field. All the means by which the X rays could pass enabled the phenomenon of light to be produced, whereas it was prevented by all those means which were opaque to these rays.

There was no doubt, M. Bardet thought, that the radiations of the Crookes's tube made a direct luminous impression on the retina.

Drugs which should not be Employed during Pregnancy.—In an article on this subject in the *Journal des praticiens* for August 28th M. Boissard remarks that in a general way all therapeutical intervention should be incriminated when it is followed by abortion or premature labor. Emmenagogues, he thinks, should be banished from the treatment, not only of pregnant women, but in the case of those in whom there is a suspicion of the possibility of the beginning of pregnancy.

According to him, there are no abortive drugs in the strict sense of the word, but there are drugs which, given in toxic doses, may cause at the same time both abortion and the death of the woman; these drugs are therefore useless and inefficacious, and there is danger of poisoning to the woman.

With regard to the ecbolic and oxytocic drugs, they belong to another class, and have the property of arousing and aiding the progress of uterine contractility, or of strengthening the intensity of the uterine contractions after they have been aroused; the action of the latter is certain, that of the former doubtful.

The action of quinine sulphate and of sodium salicylate is not to provoke abortion or premature labor, says M. Boissard; that would be very much to be regretted, as obstetrical therapeutics would be deprived of two valuable drugs. Drugs that have that property may, however, be advantageously employed in cases of contraction of the pelvis, in which it is expressly indicated to interrupt the course of pregnancy.

The abortive or ecbolic action of quinine sulphate, says the author, has been discussed by many writers whose investigations and experiments show that this drug should not be considered as an abortive agent; in several case in which there was contraction of the pelvis and it was necessary to interrupt the pregnancy, this drug was given every day in large doses without producing the least symptom of labor, yet it was given in amounts that, if not toxic, were at least sufficient to cause quinine intoxication.

M. Boissard thinks there should be no hesitation in employing quinine sulphate during pregnancy whenever symptoms of malarial infection manifest themselves, and these cases are rather frequent, pregnancy serving to arouse in some way the previously dormant infection. It is the same with sodium salicylate; only ergot, because of its oxytocic properties, should be rejected, even in cases of hæmorrhages during pregnancy, in order not to cause tetanization of the uterine fibres.

Narcotic, analgetic, or anæsthetic drugs may be administered without fear when their employment is justified, and may be of great benefit to the parturient woman. The different preparations of belladonna and of stramonium may be employed, also antipyrine, opium, chloral, and chloroform or ether. In case of threatening abortion, laudanum is admirably borne, and as much as a hundred drops, in enemata of boiled water, may be given during the twenty-four hours, twenty-five drops at a time being the amount used. It is the same also of chloral in vomiting, and of chloroform, which is employed during pregnancy to clear up the diagnosis and ascertain the exact configuration of the pelvic cavity, in order to reduce retroversion of the gravid uterus and to facilitate version by external means.

The different mercurial preparations, continues M. Boissard, are administered, not only in cases of acknowledged syphilis, but also in doubtful and unacknowledged cases when the physician finds himself in the presence of a series of abortions or premature births of macerated infants.

Concerning the administration of purgatives, M. Boissard says that, under the pretext that in the beginning of pregnancy it is dangerous to use purgatives, some women reach an extraordinary condition of constipation which is much graver than the possibility of the danger they fear. In a general way it is of great advantage to keep the functions of the intestine in a good and regular condition by the use of castor oil, cascara, senna, and enemata of boiled water.

With regard to bathing, this favors the functions of all the organs, and particularly of the skin, and pregnant women may and should take baths during pregnancy, one every fifteen or twenty days at the least, observing the following precautions: Not to bathe at a time corresponding to the last appearance of menstruation; not to allow the temperature of the bath to be above 96.4° F.; not to remain in the bath longer than fifteen minutes, and to guard against taking cold on coming out of it.

Concerning vaginal injections, the author is in favor of their general use, and thinks the necessity of their employment should be explained to women. Some precautions are given in regard to their use, and the author adds that, if they are observed, accidents resulting from the action of the hot water on the uterine fibres will be avoided, also any traumatism to the neck of the uterus.

Round Shoulders.—In the *Boston Medical and Surgical Journal* for September 9th, Dr. E. H. Bradford remarks that the condition of round shoulders has been classed as a form of kyphosis, and that, he says, is no doubt correct, but he thinks certain features deserve special consideration. They are frequently seen in growing girls and boys and occasionally in weak adults. The scapulæ drop forward, the posterior edges projecting behind. The shoulders, seen from in front, project with marked depression to the inner side, the neck is thrown forward, and the abdomen is protuberant, owing to an unusual hollowing in of the small of the back. The spine may be flexible, but in many instances the upper part is stiff.

In seeking a cause for this affection, the author continues, some impediment to the upward movement of the arms suggests itself, and the effect of clothing needs to be examined.

Both for convenience and owing to an exaggerated fear of injury to the pelvis, as well as for the purpose of arranging the clothes tastefully, it is the custom, he thinks, in dressing children to throw the weight of the garments upon the shoulders, fastening the skirts, and, in many instances, the stockings, to the waist. These waists are made of various shapes, but usually have a narrow shoulder-strap, which presses upon the upper portion of the trapezius, and upon the clavicles to the inner side of the head of the humerus. They also exert pressure, if pulled downward, upon the upper portion of the sternum. Where, as is usually the case, the skirts are buttoned to the front of this waist, a considerable drag is exerted, and in this way pressure falls upon the trapezius and the sternum, the head is thrown forward, the shoulders drop forward, and the chest is contracted. The amount of weight of the clothing is not inconsiderable, making the erect position less easily borne, the child naturally seeking the position of greatest comfort. Where stocking-supporters are added, the downward drag may become more than would be supposed. Where a faulty position is assumed a greater part of the day, the soft tissues adapt themselves, and a faulty attitude becomes habitual, the ligaments adapting themselves to such a shape. It is not probable that any pressure upon clavicles is exerted, which would not cause a marked distortion, as these are particularly strong bones, though this may occur in rhachitic children. Fortunately, however, in rhachitic children, when rickets is most prevalent, the weight of the garments is not great. Somewhat the same effect may result from the use of suspenders or from the straps of an antero-posterior support in Pott's disease. Suspenders, fortunately, are not worn ordinarily until the figure assumes its shape.

Dr. Bradford thinks that the prevention of this deformity is more important than the cure, which, he says, must necessarily involve a long-continued treatment, designed to stretch the ligaments and to strengthen the muscles. It is very important, he thinks, to bear in mind the proper arrangement of the clothing, which should be so worn that none of the weight of the skirt or underwear should drag upon the front of the waist. As far as possible, where any weight is thrown upon the shoulders, it should be a force that would pull the shoulders back. The waist should be so constructed as to make no pressure upon the sternum. The shoulder-straps should not bear upon the middle of the clavicles, but upon the tip of the acromion. In young, growing children, most of the weight of the underwear should be borne upon the hips, lessening the load upon the shoulders.

Cordol.—In the *Écho médical du nord* for August 22d M. Dassonville discusses a new medicinal agent which was discovered by Dr. Rosenberg, of Berlin. It is a tribromide of salol, and is endowed with a number of properties, the two principal of which are those of exerting a rather powerful narcotic and efficacious hæmostatic influence.

This drug, which is called cordol, is presented in the form of a white powder, insoluble in alcohol and in ether, but very soluble in acetic acid and in chloroform. It crystallizes in long, fine, white needles, and melts at 383° F. It is an inodorous substance and has no flavor.

Cordol may be prescribed in capsules in daily amounts averaging from eight to thirty grains. With the latter amount, the author states, he has nearly always produced the desired effect, and it has not seemed necessary to increase it.

The principal property of cordol is narcotic, whatever may be the cause of the insomnia. Dr. Rosenberg cites some observations, says the author, to prove its efficacy in cases of urticaria in which the itching was so intense that sleep was impossible; other cases also are cited by him in which amelioration was obtained with the use of this drug.

Regarding its hæmostatic action, Dr. Rosenberg employed it successfully in a number of cases of menorrhagia. The author himself has had occasion to employ it in a case of insomnia in which the regular menstruation lasted usually several days, and he noticed that this was arrested several hours after the administration of the cordol.

Cordol arrests nausea and vomiting, and produces a rather marked slowing of the pulse; the author states, however, that he has not verified the latter properties.

From the observations cited the author concludes that cordol is worthy of a place among the therapeutic agents employed at the present time.

Angina Epiglottidea Anterior.—The September number of the *Journal of Laryngology, Rhinology, and Otology* contains the two following cases, which are recorded by Dr. William Milligan, who thinks they may be of interest, as such cases are distinctly rare: Toward midnight one day the author was summoned to attend a young lady who was said to be suffering from severe pain in the throat, accompanied by a certain degree of dyspnœa. For a week previous the patient had complained of slight shooting pains in and around the throat, and slight swelling of the cervical lymphatic glands had been observed, especially on the right side. No definite cause could be assigned for this, and, beyond being slightly anæmic, the patient had exceptionally good general health. Upon examination of the pharynx, congestion of the faucial pillars was observed. The base of the tongue was coated with a thick, creamy fur, and the lymphoid tissue in front of the epiglottis was distinctly enlarged, swollen, and œdematous. The free border of the epiglottis was enormously enlarged and of a brilliant red color. The swelling and œdema were most noticeable upon the right side, but extended also along the free borders of the arytæno-epiglottic folds. Beyond slight congestion and swelling of both false cords there was no actual intralaryngeal lesion. The patient's temperature was 101° F., the pulse rapid and soft, and the skin moist. Headache was also complained of. The most marked and by far the most troublesome symptom throughout the course of the disease was the dysphagia. Even the act of swallowing saliva was accompanied by severe pain shooting up from the throat to the ears. The patient was advised to keep warm and quiet in bed, and to inhale steam containing compound tincture of benzoin and chloroform as frequently as possible.

Warm boric-acid fomentations were applied round the neck and over the enlarged and tender cervical lymphatic glands. The interior of the pharynx was also frequently sprayed with an ice-cold four-per-cent. solution of hydrochloride of cocaine.

Under this treatment the swelling gradually subsided, and in ten days' time the parts had practically assumed their normal appearance.

The second case was that of a medical man, aged thirty-eight years, who sent for the author hurriedly one day, as he was complaining of great dysphagia and pain in and around the neck. He had been in his usual good health until the preceding evening, when he began to complain of pain in the throat, accompanied by a marked feeling of constriction. When first seen (the day after the beginning of his symptoms) the temperature was 102° F., the pulse was rapid, the skin was moist, the tongue was furred, and the conjunctivæ were congested. Upon examination of the pharynx, both faucial pillars were seen to be markedly congested. The anterior free border of the epiglottis was swollen to at least four times its usual thickness, and was of a dark-red livid color. The arytæno-epiglottic folds, the false cords, and the true cords were also swollen and congested. The cervical lymphatic glands upon both sides were enlarged and painful. Extreme dysphagia was complained of, so much so that at the patient's request all food was given in the form of nutrient enemata. The urine, upon examination, was found to be normal. The patient was very ill for several days, and had all the appearances of a man suffering from an acute dose of septic poison. Small doses of morphine had to be given at intervals to allay the pain and irritability of the throat. The treatment adopted was much as in the previous case; with inhalations of steam containing compound camphor liniment, pharyngeal spraying with ice-cold solutions of cocaine, and boric-acid fomentations around the neck. The patient made a slow but satisfactory recovery. The case was, from the first, regarded as of septic origin, and an examination of the drains revealed an appalling state of affairs —imperfect joints, broken pipes, and sewer gas escaping into almost every room in the house.

The Ætiology, Symptoms, and Treatment of Latah. —In the *British Medical Journal* for August 21st there is a very interesting article by Mr. John D. Gimlette, whose residence in the interior of one of the Malay states has afforded him an opportunity for observing this peculiar affection. It is, he says, a functional nervous affection which takes its name from the Malay word *latah,* which means nervous or ticklish. Mr. Gimlette cites two cases, of which the following is an example:

Timah, aged forty-four years, native of Kelantan, midwife, was first seen on April 3, 1897, at Kuala Lipis, Pahang. The patient, a married woman, had had four children; two died in infancy. She could not tell much about her family history. There was apparently no evidence of latah, either in direct or collateral lines. Besides malarial fever and ordinary parasitic skin diseases—the usual afflictions of her race—she had contracted syphilis some years before. Menstruation was said to have begun about the age of ten years. It had now ceased. For some time—she could not say exactly how long—she had been latah. For the last two years she had complained of regurgitation of fluids from the mouth through the nose. She was a fairly well-nourished woman with a natural expression. The chest was well developed, and the heart and lungs were normal. Pulse 80, weak. The knee-jerks were exaggerated; there was no ankle-clonus. The pupils were normal in size, and acted to light. In the roof of the mouth were two small round holes in the middle line, one in the soft palate, the other perforating the hard palate. The palate was not otherwise deformed. During a quiet conversation and during her physical examination the patient responded readily to what she was asked, but appeared to be nervous about answering. On being suddenly startled by a loud exclamation she had a slight nervous tremor, and was thenceforth completely latah for the time being. She could then be induced by the verbal suggestion of any one present, supplemented by appropriate gestures, to laugh or cry, sing, dance, or pray alternately, and advance or retreat at will. For example, the author told her to strike the inspector of police, who was sitting near him, and for whom she had great respect, whereupon she responded, " Strike, strike," and struck him heavily in the chest several times. No other suggestion being at once offered, she seemed to recover her senses instantaneously as it were, and carried her hands to her head, looking round with a perplexed expression, evidently not having been responsible for her previous actions. This quick recovery with the disconcerted attitude occurred many times during the intervals of the suggestions. Toward the close of this pitiable exhibition, says the author, which lasted about half an hour, the patient was gradually robbed of her power of self-consciousness and command. She invariably repeated aloud the suggestions offered to her, and not only imitated grimaces, however absurd, but mimicked different qualities of voice, and repeated strange English words with remarkable accuracy. On being handed a box of matches and told to eat it, the operator at the same time pretending to masticate, she had no hesitation in beginning and declaring it delicious; but on the suggestion of another person that it was pork, she readily threw the box away with an expression of great disgust. Upon being told that a tiger was in the room she exhibited no alarm; but when it was suggested that it was about to attack her she also appeared ready to attack, although frightened. At last she was evidently becoming exhausted, and asked for a glass of water. The pulse was now 100, and she was trembling. When she had half finished the water it was suddenly suggested to her that it contained poison, and that she had better throw it away. She at once dashed both glass and its contents on the floor. On recovering her natural state, and being questioned quietly as to her conduct, she could give no explanation; she was good-tempered throughout. It was very evident to all the Europeans present that the exhibition had not been premeditated with the idea of causing either diversion or pity.

The author is of the opinion that in this disease heredity has a great, though perhaps not a well-defined, influence. The transmission, he says, in an exaggerated form of a primordial Malay quality, such as conservatism tainted by the influence of some old dormant superstition, may be a factor in the ætiology. The ancient superstitious faith of the Malays before their conversion to Mohammedanism still survives in their custom of ber-hantu. Mr. Gimlette states that this witchcraft is actually used by the native physicians in their treatment of sick persons. It bears an analogy, he thinks, to the religious and mystical element which pervaded the ecstatic disorders of the fifteenth, sixteenth, and seventeenth centuries, and still prevails in the faith healing of to-day. Besides ber-hantu, many exorcisms which the ear of devils can not tolerate are commonly used by the natives of Malaya. The pure Mohammedan religion does not appear to have any influence in the causation of latah. It is the mixture of religion and superstition with the fearful belief in devils, familiars, and ghosts, so common among the Malays, which may have a constraining influence. The natural quality of imitativeness is well developed in the Malay mind. A morbid proclivity toward it must be an exciting cause of latah. The trick which latah persons have of verbally repeating the suggestions which they are about to carry out shows how deeply engraved this impression must be.

Mr. Gimlette thinks that hereditary antecedents, such as syphilis or any neurotic disease, do not seem to have any certain relation to the ætiology. Consanguinity may have some influence, for intermarriages are very common among the Malays themselves. It is not unlikely that children become affected through family association, and it is said that tickling them to excess will predispose them to become latah. Proof by tracing the life history of individuals is wanting to justify a conclusion. The children of acclimatized Chinese settlers who have intermarried occasionally become latah in after-life—that is to say, they are not born latah. It is said that Eurasians also more rarely become affected. Social position and hygiene appear to have no influence in the causation of this disease. Latah, it is true, is usually met with among the poor inhabitants of obscure native villages, but in Singapore and in the larger towns many cases may be observed. Although the hygiene of the village is not good, nevertheless a Malay never forgets the privacy, delicacy, and retirement almost generally observed elsewhere in satisfying the calls of Nature. A regular habit of body and the securing of cleanliness at a neighboring stream are among the principal rules of his life.

Latah seems to differ, continues the author, from the "latak" mentioned in Quain's *Dictionary of Medicine* and the "lata" or "délire à Java" noted by Bordier, in not being distinctly epidemic. The varieties are, however, manifestly akin. The geographical extension of genuine latah may be said to be confined to the Malay Peninsula and the East Indian Archipelago. This limitation suggests the idea that a humid climate may have some influence in the causation; but the apparent identity which exists between latah and the miryachit of Siberia must be borne in mind. Besides its identity with the "tara" of Siberia, it seems, indeed, to share an affinity with the emotional diseases of most other countries; for example, with those of Griqualand, Norway, and Iceland, and with the "ramaninjana" of Madagascar, the "jumping disease" of North America, and the "shaking disease." In the Malay Confederated States cases are more evident in certain districts, such as Kedah, than in other parts, such as Perak. On the whole it is not rare.

The nature of latah, the author says, is essentially chronic, and without complications it may last for years. When the typical symptoms of the fit are developed there is no difficulty in recognizing the disease. The patients always present the curious exhibition of creatures who are unnaturally susceptible to the influence of subjective suggestion. He thinks that two remarkable characteristics are the induction of an attack by means of a sudden surprise, a startling appeal, or a direct command, and the sequel of an extraordinary servile imitation of that which may appear indicated. The provocation, whether accidental or willful, physical or by word of mouth, must be sudden. It seems to be the effect of shock which finally overbears the balance of an unstable nervous system.

Mr. Gimlette thinks it is an obscure psychical condition, having its pathogenic origin with both hysteria and hypnotism in a neurosis which lowers nerve force and brings about an abnormal reflex discharge of it. It is worthy of observation, he says, that there are no indications of degeneracy, such as anatomical or physiological stigmata, unless the morbid emotional condition may be regarded as a physiological stigma.

Mr. Gimlette states that the Malays themselves appear satisfied with the simple knowledge that a person is latah. They do not look upon it as being an illness in any way, but in general magnanimously refrain from influencing the sufferers to any extent. They are, however, ready to excuse even the most extravagant demonstration. Any proposal to treat the patient in an asylum would be good-humoredly rejected.

The cure of latah in the individual seems, the author remarks, to be impossible until a precise knowledge of its pathology is obtained and verified, if possible, by means of post-mortem examination. Up to the present time this disease has not been affected by any remedy. The extraordinary mimetic tendency of monkeys might perhaps by experiment be developed into a condition identical with latah, and so afford knowledge which would lead to its cure. The aim of general treatment would appear, he says, to be to promote the *mens sana in corpore sano* by keeping both digestion and strength as perfect as possible, and at the same time, in order to make the patient's life happier, to shelter him as much as possible from the sportive suggestions of casual bystanders. Displays of this kind for the purpose of amusement can not be too strongly deprecated, for one can not but suppose the march of this peculiar disease to be influenced by the number of fits induced, and to be fostered by a lack of moral control.

On Tuberculin.—In No. 16 of the *Correspondenz-Blatt für schweizer Aerzte* for the current year there appears an article by Dr. Tavel, of Berne, in which he gives a *résumé* of all the work done in immunization to tuberculosis in general and especially in relation to Koch's new tuberculin. Dr. Tavel does not express any opinion on the therapeutic value of the preparations noted, but only gives the experimental facts on which the present status of specific therapeutics in tuberculosis is based.

The author distinguishes insusceptibility to bacteria—*i. e.*, true immunity—from insensibility to their toxines; the former as bacterial immunity, the latter as toxine immunity. The one is entirely independent of the other: thus, for instance, the immunity produced by Pasteur against anthrax and that by Pfeiffer against typhoid fever and cholera (bacterial immunity) are sometimes followed by an increased susceptibility to the toxines.

In the production of artificial immunity two ways have generally been followed: The formation of the "anti-bodies" is left to the organism to be immunized (the active procedure), or the "anti-bodies" are produced by a foreign organism, that of the horse, for instance, and the serum, containing the immunizing properties, subsequently transferred to the organism to be immunized (the passive procedure).

Active and passive immunization were first attempted by means of the metabolic products of the bacilli. The tuberculin which, in Koch's opinion, represented "a glycerin extract from the pure cultures of the tubercle bacilli," can not be considered as such. It has to be looked at as an extract of the metabolic products which adhere very closely to the bodies of the bacilli. This peculiarity was well shown by the experiments of Strauss and Gamaleïa and by Prudden and Hodenpyl, by intravenous injection of dead tubercle bacilli. These toxines penetrate only slowly into the surrounding tissues, a fact which satisfactorily explains the local process of tuberculosis, the tubercle, and the unimportant rôle intoxication plays in this disease.

The author further enumerates the attempts made to produce preparations without the dangerous properties of the crude tuberculin and of higher efficacy. Precipitation with dilute alcohol and subsequent solution gave the *tuberculinum depuratum* of Koch, with an action five times stronger than that of crude tuberculin. Precipitation with bismuth-iodide of sodium and alcohol led to the *tuberculocidin* of Klebs and, with some modification of the chemical procedure, to *antiphthisin.* Tuberculin and tuberculocidin are chemically different from antiphthisin, in the latter the extraction of the tubercle bacilli being entirely avoided.

The development of reactive processes in the treatment of persons with tuberculin has been supposed to be essential. As the products of these reactive processes were obtainable in the organism of animals and transferable by means of the serum, this method was taken up first by Héricourt and Richet as early as 1891. Their experiments were followed by many others, especially those of Nieman, who showed clearly the possibility of producing an antituberculin.

The other and most recent method by which immunization has been attempted is, as the author states, that with the proteids of the tubercle bacilli. Koch, who has published the latest results in this direction, obtained by mechanical destruction of the cellular membrane and extraction and solution of the protoplasm two preparations which he calls TR and TO. Dr. Tavel only recapitulates the facts given by Koch in his last publication on the subject; he regrets that no exact animal experiments were published in order to support the affirmation that TR possesses immunizing properties.

The author, finally, believes that the experiments of Viquerat promise good results. They consist in the production of an immunizing serum from partially immune animals. The mule shows the peculiarity of responding to an infection with tubercle bacilli (by intravenous injection), but readily overcomes the attack. There is a formation of tubercles and there is proliferation of the bacilli at first, but this soon stops; in a hundred days Viquerat as well as Tavel has not been able to find any more living bacilli. During the process of restoration there is a continuous production of "anti-bodies," which circulate in the serum. This serum, injected into human beings, produces a passive bacterial immunity. In conclusion, Dr. Tavel gives a *résumé* of all the different methods of antituberculous specific therapy:

1. Active immunization with the metabolic products of tubercle bacilli: Tuberculinum Kochii, tuberculinum depuratum Kochii, tuberculocidin (TC) Klebs, and antiphthisin Klebs.
2. Passive immunization with the serum of animals immunized with tuberculin (tuberculinized): methods of Héricourt, Richet, Maragliano, Nieman, and others.
3. Active immunization with the proteids of tubercle bacilli: Tuberculin (TR) Koch.
4. Passive immunization with the serum of animals treated with living tubercle bacilli (tuberculized): Viquerat.

The Dangers of Artificial Respiration.—The most obvious thing to do, remarks a writer in the *Lancet* for August 28th, when a patient fails to take air into his lungs while he is under the influence of an anæsthetic is to adopt some form of artificial respiration. In most cases, he says, the treatment is the correct one, but it must not be assumed that in every case in which the breathing stops artificial respiration is the first act to be performed. It is not free from danger; in more than one instance it has led to fracture of the ribs, owing to some excited assistant pressing too vigorously upon degenerated bones.

The writer refers to numerous cases in which foreign bodies have become engaged in the air-passages, and have been discovered only after futile efforts at artificial respiration had been abandoned. Not infrequently, the writer continues, when abdominal section has to be performed to relieve intestinal obstruction there is a fatal tendency for the stercoraceous vomiting, which is so likely to occur during the operation, to result in matter being sucked back into the larynx. This is the great peril of the anæsthesia in such cases, and every instance of death under it is a warning.

The following case, which came under the observation of Mr. Cholmeley, of Wolverhampton, is cited by the writer as an illustration of this point: It appears that a man, aged fifty-eight years, exhausted by disease, was to be operated upon to relieve obstruction, caused, as was found at the necropsy, by annular carcinomatous growth constricting the intestine at the ileo-cæcal valve. The general condition of the patient was very bad, and the operation had to be delayed by the patient's refusal to give his consent, so that at the time he was given the anæsthetic his state was a grave one. He took the ether well. What degree of anæsthesia was obtained was not mentioned. In ten minutes, the abdomen being opened and the surgeon being engaged in handling the intestines to discover where the constriction was, the patient began to vomit. He became livid and a gurgling was heard in his trachea. Artificial respiration was resorted to for a short time without improving the man's condition, and then tracheotomy was rapidly performed. A quantity of stercoraceous vomit issued from the tracheal tube, and, although the artificial respiration was kept up, the man died.

There can be no doubt, the writer continues, that in cases where it is certain that vomit has entered the lungs the first thing to do is, as was done in the present case, to perform tracheotomy and draw out with some pump all the fluid which can be got from the air-passages. Artificial respiration, when done by pressing upon the ribs and moving the arms, can only force the stercoraceous vomit into the finer bronchi and effectually cut off any chance of the patient's recovery. It has been suggested that preliminary washing out of the stomach lessens the risk of vomiting, but it is not at present certain how far this can be relied on as a safeguard, since as the stomach is emptied a renewed regurgitation from the intestines is apt to occur. It seems probable that the inevitable manipulation of the intestines induces the reversed peristalsis which culminates in vomiting. Were this danger considered imminent it might justify a preliminary opening of the trachea and plugging above the tracheotomy tube, so as to effectually shut it off from the pharyngeal space. Whether such a procedure would increase too much the peril of the case experience alone can decide.

Infant Feeding by Prescription.—In an article on this subject in the August number of the *Medical Chronicle* Dr. Henry Ashby remarks that in the present state of dairying in England all forms of preserved-milk foods for infants are indispensable and, if they are carefully prepared, are useful as temporary resources, but he thinks that none of them can take the place of the mother's milk or of fresh, clean cow's milk properly modified and prepared.

It is necessary, the author says, to study the chemistry and composition of breast milk and its variations in health and disease. It is necessary to note the effects of diet and also mental disturbance on the composition of breast milk, and find if certain symptoms of dyspepsia in infants are due to an undue preponderance of some of the milk constituents. It is known that a milk rich in fats and proteids is very likely to give rise to vomiting and diarrhœa, with green and curdy stools. It must be within the experience of most practitioners, he says, that sometimes a newborn infant taking the breast suffers severely from vomiting and diarrhœa, which may prove fatal, and which is entirely due to the exceptional richness of the colostral milk. Draw off the breast milk and dilute it, or withhold the breast for a while, he says, and everything goes well again. In most such cases it is unnecessary to wean. Too high feeding on the part of the mother is apt to give rise to rich milk, and consequently causes dyspepsia, colic, and diarrhœa in the infant. A milk poor in fat and proteids is apt to give rise to anæmia and constipation in the infant.

A careful study of the composition of human breast milk and the effect of variations in its composition on the health of the infant not only is of importance in the treatment of infants at the breast, but has paved the way to scientific infant feeding.

According to Dr. Ashby, for artificial feeding the only substitute allowable is fresh milk from healthy cows, modified according to circumstances and consumed within twenty-four hours of the milking.

Dr. T. C. Rotch, says the author, has been the pioneer in the work of modifying milk, and under his direction the Walker-Gordon Milk Company has carried out the work to a practical success. Its first care is to produce a safe milk, that is, to be certain that the cows are free from infectious disease and to exercise the most scrupulous care that the milk is not in any way contaminated; the feeding of the cows is conducted on scientific principles. The milk is "separated" at once into a sixteen-per-cent. cream and skim milk, cooled by ice, and sent at once to their city laboratory. Here, says Dr. Ashby, the prescriptions given by the attending physician are made up by mixing cream, separated milk, and a solution of milk sugar; the modified milk is placed in feeding bottles, stopped with cotton wool, and sent out in suitable baskets.

This company, the author continues, does not place much reliance on sterilization, as it believes that by long heating changes take place in the fat and proteids which are not advantageous to the infant. The milk is sterilized only in case it has to be sent long distances. The company prefers pasteurizing and preserving on ice, or, in fact, not heating at all, trusting to ice for the preservation of the milk for twenty-four hours. But every possible precaution is taken to keep only healthy cows and to keep the milk free from contamination with micro-organisms.

Dr. Ashby states that this company does not advise on infant feeding, either directly or by advertisements. It does not prescribe; it only makes up prescriptions for physicians. A blank form is given which must be filled out and signed by the attending physician before the modified milk is furnished to the family.

Such a milk establishment is, the author thinks, a great boon to the physician; it prevents nursery blunders or carelessness in the preparation of the food, the physician can rely upon the safety of the milk; above all, he knows exactly the composition of the food, and, if necessary, he can strengthen or weaken it and increase or lessen the amount of proteids, fat, or sugar by altering the prescription.

Dr. Ashby thinks it is doubtful if cow's milk can be modified so as to make it exactly resemble mother's milk, for the proteids of the former differ unquestionably from those of the latter, both in quality and in quantity. The undoubted advantage, however, is, he says, that in the milk laboratory the percentage composition of the cow's milk can be altered to suit the idiosyncrasies of the infant's digestion, while we have far less control over the percentage composition of the breast milk of the mother or wet nurse.

He feels sure that the scientific modification of cow's milk will be a means of dealing with the most serious of infantile ailments never heretofore possessed, and he confidently predicts a great future for it.

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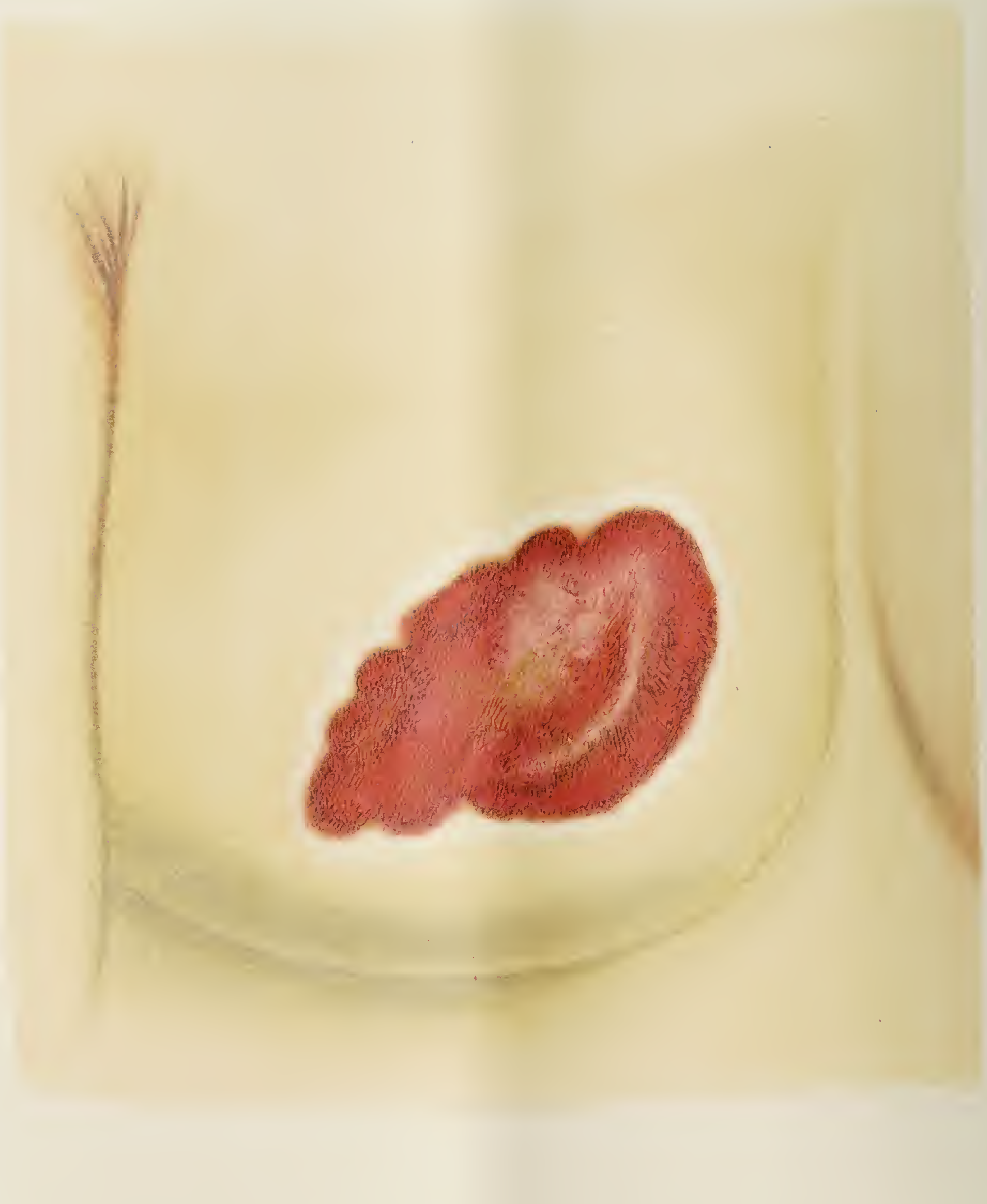

DRS. FORDYCE AND WIGGINS'S CASE OF MALIGNANT PAPILLARY DERMATITIS.

THE NEW YORK MEDICAL JOURNAL, October 2, 1897.

Original Communications.

REPORT OF A CASE OF
MALIGNANT PAPILLARY DERMATITIS,
WITH ESPECIAL REFERENCE TO ITS PATHOLOGY.*

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VISITING DERMATOLOGIST TO THE NEW YORK CITY HOSPITAL,
BLACKWELL'S ISLAND, ETC.

The case which is herewith presented for your consideration and discussion belongs to that comparatively rare group which was formerly designated by the title of Paget's disease of the nipple, although Velpeau described the condition many years before Paget called attention to the disorder. Of late, owing to a better understanding of its pathology, the belief is becoming general that this disease is a true carcinoma of the skin from its inception, rather than, as was formerly thought, *that its malignancy was secondary*, or the result, in other words, of a long-continued irritation, caused by a primary eczema. The probability that the condition under consideration is primarily of a malignant nature, coupled with the fact that similar conditions have been recorded affecting the skin of other regions of the body than the female breast, would seem to make the title with which this paper is headed—malignant papillary dermatitis—not only a more appropriate but a more correct designation than that formerly employed. The disease occurs most frequently in women who have reached or passed the menopause, and usually begins in the epidermis of the breast surrounding the nipple, although, as has been already stated, it is not necessarily confined to this locality. The signs of the disease are, at first, those commonly found in eczematous conditions, which, on this account, are frequently mistaken for it. There are roughening, reddening, and scaling of the epithelium situated about the centre of the nipple, accompanied by a slight oozing and crusting, and a tingling, burning pain. Gradually fissures form, the trouble progressing slowly but steadily till, as Paget says, there is presented for inspection an ulcer having a sharply defined border, with a "florid, intensely red, raw surface, very finely granular, as if nearly the whole thickness of the epidermis were removed." Sooner or later the nipple retracts completely. Hardaway, in his article on the Surgical Diseases of the Skin, in vol. iii, page 460, of Dennis's *System of Surgery*, says that the disease may exist for years without determining any deterioration of the general health, but that unless removed it will ultimately prove fatal. On the other hand, if the diseased tissue is removed at an early date, the prognosis is favorable. Van Harlingen, in his work on *Diseases of the Skin*, page 93, says that in his opinion this disease is actually or potentially a carcinoma, and should be treated as such.

On January 20, 1897, Mrs. E. L., a widow, fifty years of age, was admitted to the gynæcological ward of the City Hospital as a private patient. She stated that her mother and most of her brothers and sisters had died of phthisis, that her mother had been subject, from time to time, to carbuncular disease, but that, as far as she knew, no member of her family had ever suffered from any form of cancer. As a girl, she had always enjoyed good health, her first menstruation occurring in her twelfth year, and being regular and painless thereafter. She had married in her eighteenth year, and had had two miscarriages and ten children. Her confinements had been, for the most part, difficult, necessitating the employment of instruments. Her nipples had been small, and she had nursed her children with difficulty. About five years ago, and seven years after the birth of her last child, the patient noticed for the first time a small sore, which appeared on and around her right nipple. It grew gradually, being somewhat circular in form. After a time the patient noticed the occurrrence of an intermittent discharge of a clear, viscid fluid. Occasionally the patient had been troubled by a sensation of tingling and burning, but otherwise the disease had been painless. On examining the affected breast, an inflamed area, of about two by three inches in extent, was found to surround and include the right nipple, which was retracted. This area had a sharply defined border, and its surface presented a granular and bright-red appearance, slightly streaked with white. The underlying tissues were infiltrated, but no tumor could be felt in the breast. As there seemed to be no doubt, after a consideration of the patient's history and the signs of the disease, that it was one of malignant character, the patient was advised to submit to excision of the diseased tissues. This was done on the day of her admission to the hospital. After the skin had been incised about the ulcerated surface, a hard nodule could be made out in the substance of the breast, and the entire organ was removed, together with the contents of the axilla. Several of the glands proved to be enlarged, although this condition could not be made out till after the axilla had been opened. The convalescence, excepting for a slight infection of the wound occurring after the first dressing, was uneventful.

Pathological Anatomy (Professor Fordyce).—The specimen of Paget's disease submitted to me for examination consisted of the entire diseased tissue, involving a surface area of about six square inches, together with the underlying mammary gland. The glandular tumor was not larger than an English walnut, and rather soft on pressure. On squeezing it, a whitish fluid was discharged through the lactiferous ducts at the former site of the nipple.

A portion of the tissue was fixed in a four-per-cent. formalin solution, and subsequently hardened in alcohol; another portion in alcohol of increasing strengths.

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* Read before the Society of Alumni of Bellevue Hospital, March 3, 1897.

Various staining methods were employed, which will be referred to later.

An examination of the gross specimen showed the area involved by the superficial inflammation to be somewhat depressed below the level of the surrounding healthy skin. Under a low power this depression is seen to depend upon a partial destruction of the epidermis. The derma is slightly thicker than the healthy skin with which it is directly continuous, its increased thickness being dependent on the dense cellular infiltration, œdema, and connective-tissue growth. Under a low power the most striking changes are seen to involve the epidermis and the underlying papillary region of the true skin. The superficial dermal region is the seat of a dense cell infiltration, which extends in a less diffuse manner along the course of the small blood-vessels and sweat ducts to the deeper portions of the cutis. With hæmatoxylin and eosin stain the cells appear to be chiefly of the single nucleated variety. In the region of the epidermis, however, many polynuclear leucocytes are seen among the first-mentioned variety of cells. The connective-tissue bundles among which the cells are found are forced apart by the serous effusion which is constantly secreted by the diseased tissues in the living state. The connective-tissue fibres, as well as many of the cells in the papillary region, take up the stains badly, and appear to have undergone a partial necrosis. In the deeper tissues the cell infiltration is seen more especially along the course of the capillaries, the sweat ducts, and the hair follicles, with the accompanying sebaceous glands.

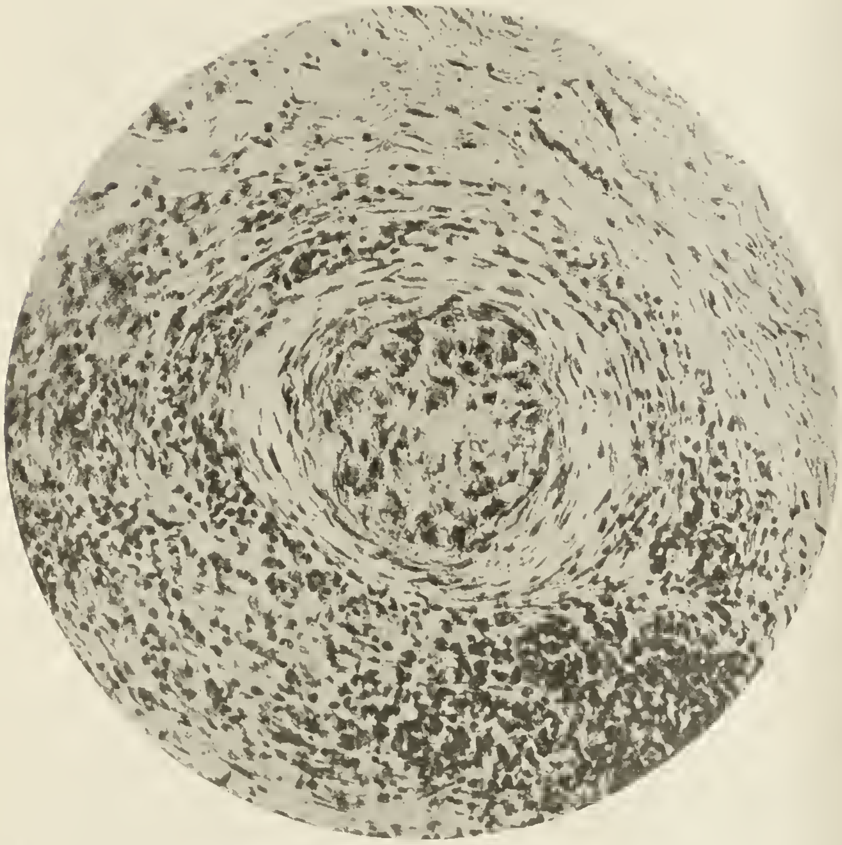
Fig. 1.—Spencer ¼, projection oc. 2. Lactiferous canal surrounded by connective tissue growth and lymphoid cells.

The lactiferous canals below the nipple and in the deeper tissues are in places surrounded by foci of uninuclear lymphoid cells which stain intensely, and seem to be of recent origin. Some of these canals are surrounded by a dense growth of young connective tissue, which appears to be a conservative process intended as a protection against the invasion of the proliferating epithelium of the gland (Fig. 1).

At the periphery of the glandular tumor, with the exception of a slight dilatation, the lactiferous canals were found to be quite normal. Directly below the nipple the ducts were dilated to a considerable degree, and filled with proliferating and degenerating cells (Fig. 2).

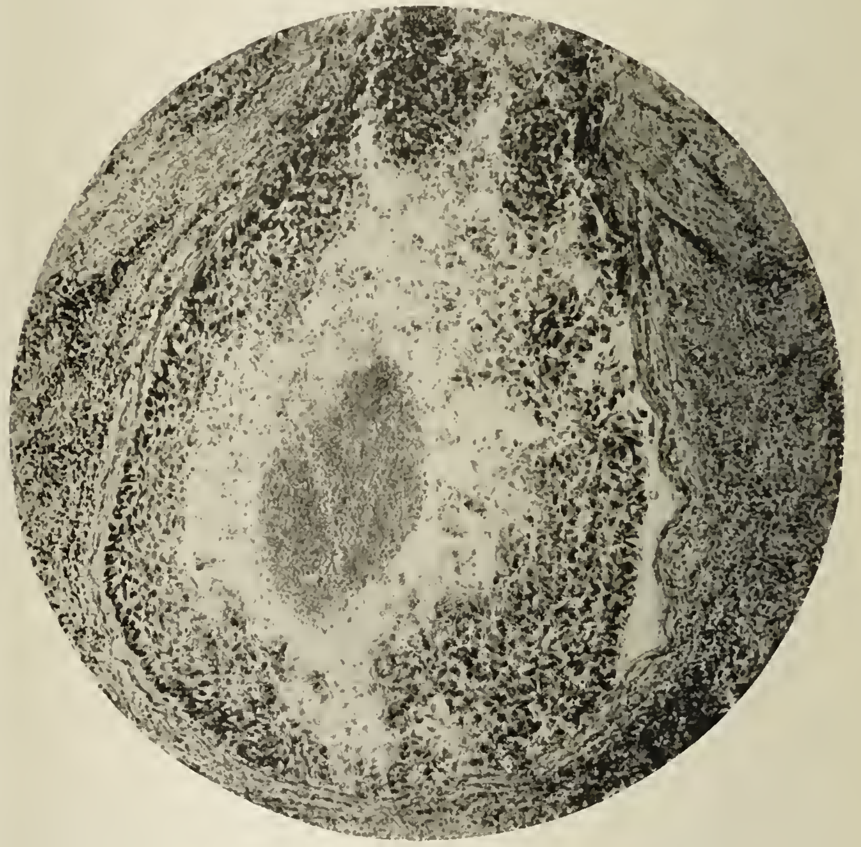
Fig. 2.—Spencer ½, compensation oc. 4. A dilated milk duct filled with proliferating and degenerated cells.

The active process was the predominating one, however, as mitotic changes were frequent, and the cells were readily stained by the reagents used. In the accompanying photograph (Fig. 3) the intracanalicular proliferation of the epithelium, as well as the beginning infection of the surrounding tissue, is shown.

The basement membrane of most of the canals was intact, even in those which were widely dilated. In some, however, the epithelial elements were seen to be breaking through into the surrounding connective tissue, showing an early stage of the malignant process.

The invasion of the dense connective-tissue stroma by the atypical epithelial processes is shown in Fig. 4.

We have in this latter illustration clear proof of the malignant nature of the gland tumor.

In sections stained with Unna's polychrome-methylene-blue solution, and decolorized with neutral orcein, a large number of "*Mastzellen*" (granular cells) were seen in the papillary region, about the glandular appendages, scattered irregularly throughout the connective tissue, and among the fat cells. The cell nuclei, by the method in question, stain a light blue, while their numerous large granules take on a red color. They are several times larger than the ordinary lymphoid cells, and seem to invade the tissues in an irregular manner like foreign bodies.

Although present in many pathological conditions, as well as in normal tissue, their number was vastly increased in the case under investigation. The part which they play in the disease process, as well as the nature of the irritant which calls them into activity, must, in the present state of our knowledge, remain problematical.

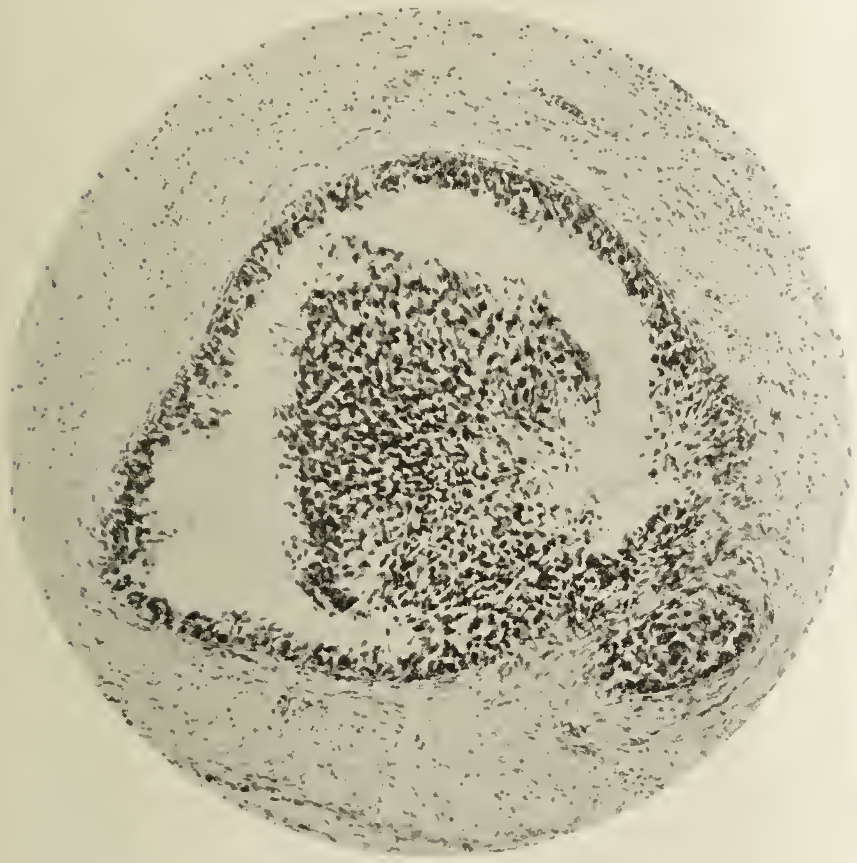

FIG. 3.—Spencer ⅙, compensation oc. 4. Intracanalicular proliferation of epithelium.

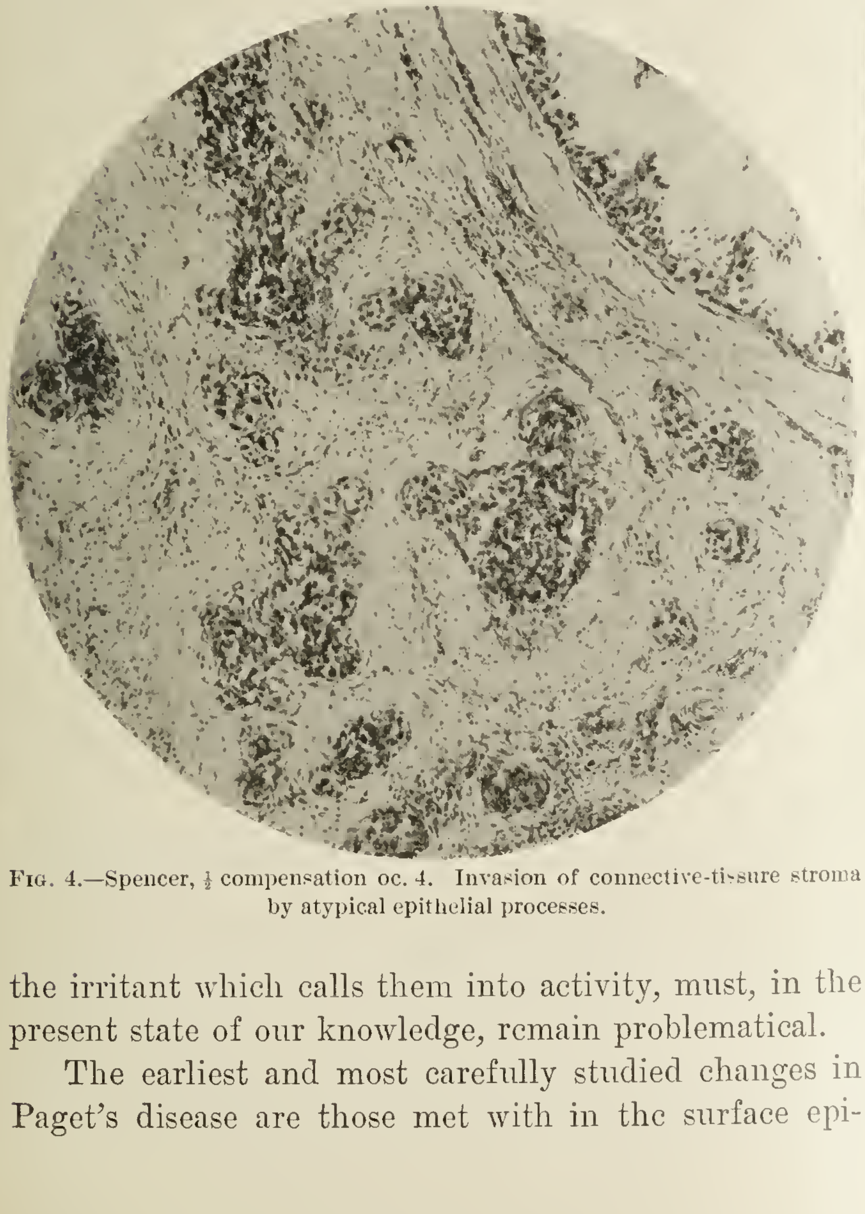

FIG. 4.—Spencer, ⅙ compensation oc. 4. Invasion of connective-tissure stroma by atypical epithelial processes.

The earliest and most carefully studied changes in Paget's disease are those met with in the surface epithelium. It is here that the cell changes and inclusions are met with which were first described by Darier, and afterward by Wickham and others, as coccidia. For a time the ætiology of the affection was thought to have been discovered in these so-called unicellular animal organisms, and a long step taken in advance regarding the causation of cancer. A more careful study of these cell degenerations has pretty conclusively demonstrated the non-parasitic character of many of them. The infectious nature of Paget's disease has, however, by no means been absolutely disproved, and an element of doubt yet remains as to the character of certain of the cell changes which are found in the affection.

In an early stage of the disease, before the horny layer has ceased to be formed, the epidermis is found to be distinctly thicker than normal, but its constituent cells are altered in a curious and quite characteristic manner. In many of them the nuclei are swollen as the result of cellular œdema, and are encircled by a clear space, from the retraction of the surrounding protoplasm. In alcohol preparations this retraction of the surrounding protoplasm is more distinctly shown, as in Fig. 5.

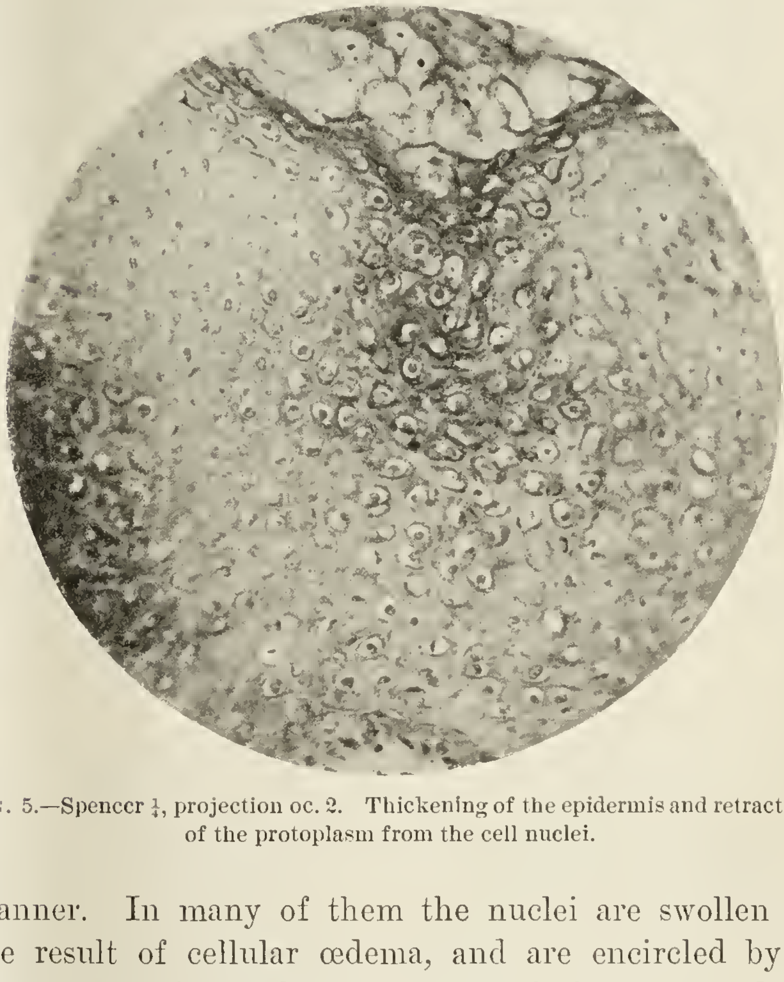

FIG. 5.—Spencer ⅙, projection oc. 2. Thickening of the epidermis and retraction of the protoplasm from the cell nuclei.

As the epithelial changes become more advanced the nuclei disappear from many of the swollen cells, leaving clear, cystlike cavities surrounded by a distinct membrane (Fig. 6).

In other cells the nuclei are deformed and pushed to one side by the adjacent swollen cells.

Where several nuclei are inclosed in a cystlike cavity, formed by the confluence of adjoining cells, their resemblance to parasitic inclusions is very striking. The epidermis was the seat of a proliferative process as well as a degenerative one, as numerous irregularly shaped downgrowths of epithelium were met with, extending for some distance into the corium. Certain cells in these down-growing columns showed the characteristic œdematous changes, and others presented mitoses.

In addition to the changes mentioned, a number of the epithelial cells were found to be invaded between the cell wall and the nucleus by small, round or oval, deeply stained bodies, about the size of the nucleus of a white blood-corpuscle. These cells, which I regarded as leucocytes invading the epithelium, correspond to Wickham's description of the early stage of the coccidia.

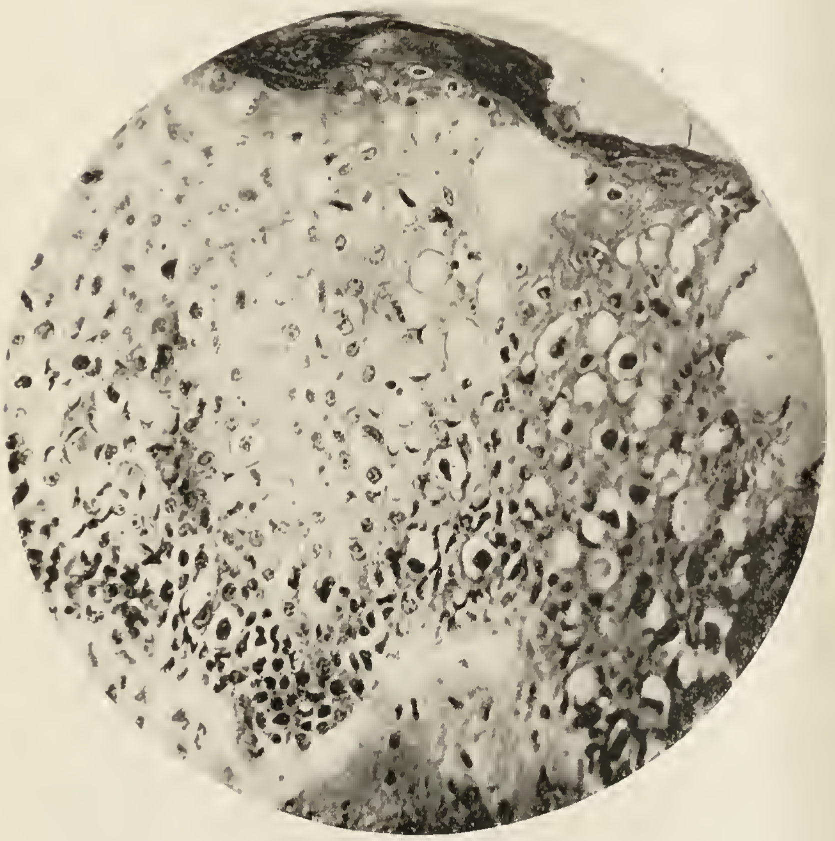

Fig. 6.—Spencer ⅙, projection oc. 4. More advanced change in the epidermis showing numerous vacuoles and altered cells.

I have noted similar invasions of epithelial cells by polynuclear leucocytes in many widely divergent conditions, and can attach little importance to their presence in this case.

In a still farther advanced stage of the disease the horny epithelial layer is entirely absent, and nothing remains of the epidermis excepting two or more layers of swollen rete cells. In places the epidermis is replaced by degenerated connective tissue, inclosing leucocytes and *débris* from the blood and cell infiltration. Islands of normal epidermis are met with, bounded on either side by partially degenerated cells. At the margin of the patch the change from healthy to altered epithelium is abrupt, normal cells lying beside the swollen and otherwise degenerated ones. In the hair follicles similar changes are met with, the outer layer containing many vacuolated and œdematous cells.

The morbid changes in Paget's disease may be briefly stated as inflammation of the papillary region of the derma, leading to an œdema and vacuolation of the constituent cells of the epidermis, followed by their complete destruction in places and their abnormal proliferation in others. The change in the epithelium of the lactiferous canals and glandular epithelium, which is also of a proliferative and degenerative nature, is secondary to the changes in the surface epithelium, and may be regarded as of the same nature, and probably produced by the action of the same irritant. The overdistention of the lactiferous canals by the proliferating epithelium, resulting in a malignant infection of the surrounding connective tissue, is the usual termination of the affection, and is well shown in the case described.

The chief point of interest in this particular case is the length of time that the disease had existed prior to the occurrence of malignant infection—nearly five years—as the microscopical examination of the diseased tissues after their removal demonstrated the fact that this degeneration was of recent origin. The usual duration of the disease before this change occurs is about three years, but instances have been recorded where it has extended over twenty years before showing evidence of definite carcinomatous degeneration of the underlying glandular tissues. Generally, malignant papillary dermatitis is readily distinguished from eczema of the nipple, as the ulceration occurs later in life, is unilateral, its borders are more sharply defined, its surface presents a redder and more granular appearance, the underlying tissue being infiltrated, and it is accompanied by retraction of the nipple and nodules in the organ, which is not the case in eczema. As soon as the disease is recognized, the breast should be excised, and if the disease is determined early and the proper treatment is promptly applied, there need be little or no fear of a recurrence of the trouble.

55 West Thirty-sixth Street.
66 Park Avenue.

BUNION:

ITS ÆTIOLOGY, ANATOMY, AND OPERATIVE TREATMENT.*

By PARKER SYMS, M. D.

The condition to be described is a complex one, involving the structures which form the metatarso-phalangeal joint of the great toe, and the superficial tissues in its region.

Bunion was the name originally given to this condition when it was considered to be merely an inflammation of a bursa on the inner side of this joint. Hallux valgus is the proper name of the deformity which is the cause of this bursitis. The bunion is always a secondary condition, and is merely a result of the deformity of the toe.

The name hallux valgus should displace the popular term bunion, but it probably will never do so with the laity. By hallux valgus is meant an outward displacement of the first phalanx of the great toe to a greater or less degree, varying from a slight divergence from a straight line to a divergence equal to a right angle.

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* Read before the Society of Alumni of Bellevue Hospital, May 5, 1897.

The cause of this deformity of the foot is the wearing of shoes which are faulty in shape or are ill fitting.

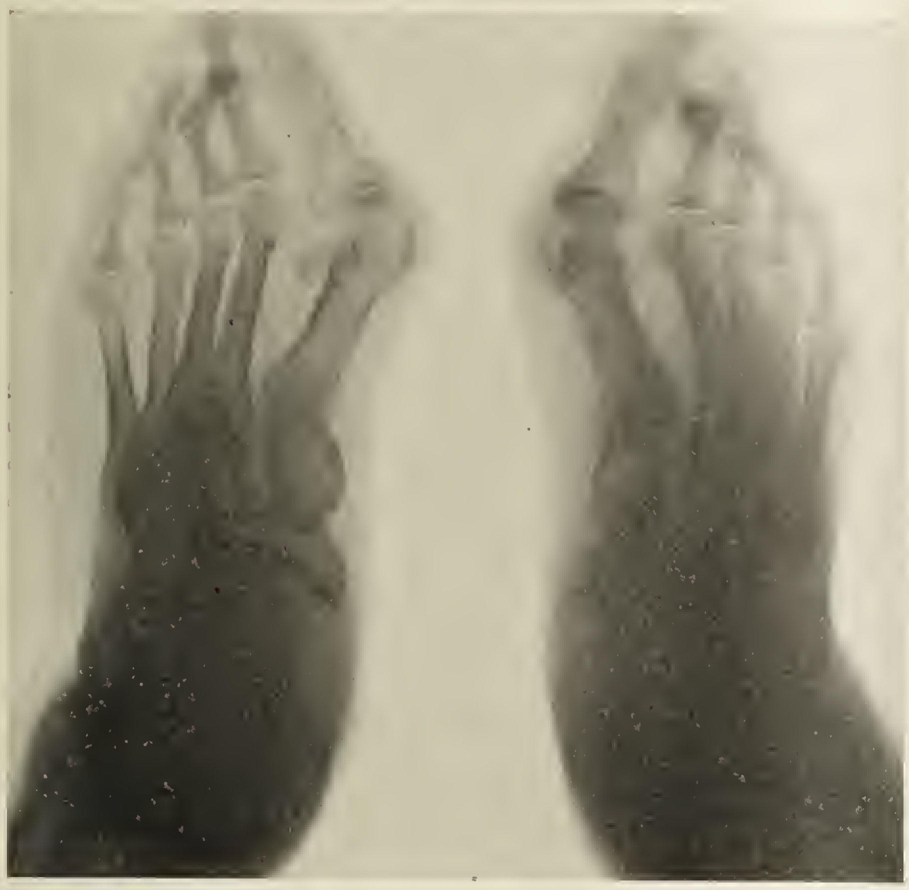

Fig. 1.—Type of hallux valgus. Shows: *a*, hypertrophied end of metatarsal bone; *b*, hypertrophied "condyle" on inner side of metatarsal bone; *c*, outward displacement of phalanx; *d*, inward displacement of metatarsal bone; *e*, partial dislocation of phalanx.

A shoe that crowds the toes together or pushes the great toe backward will tend to produce this trouble. In this class are shoes with the following characteristics: First, shoes with narrow points, with the point in the median line; second, shoes that are too short; third, shoes that are so loose at the instep as to allow the foot to ride forward, and thus bring direct backward pressure on the toes; fourth, the worst of all, are shoes which combine two or all of these defects. Some pointed lasts are so constructed that the point is on the inner side of the shoe, and the toe is not necessarily displaced.

This deformity has been ascribed to osteoarthritis, to suppurative arthritis, to rheumatism, and to gout; but bad shoes are its cause, and the arthritis is the result of the displacement they produce, and of the injury they do to the joint. From the nature of the cause, and from the characteristics of this disease, will be readily understood the facts that it is more common in adults than in children, and more frequently found among women than among men.

The condition will vary a good dead in different instances. In mild cases there is but slight deflection of the toe outward, and little or no dislocation. This deflection allows the pressure of the shoe to come on the inner side of the head of the metatarsal bone, and the consequent irritation will result in a periostitis and a hyperplasia of bone at that site, finally amounting to an exostosis. Ere long the pressure between the exostosis and the shoe will produce an inflamed bursa, and there is then a mild case of so-called bunion.

A more advanced case will show a decided hypertrophy of the whole inner side of the head of the metatarsal bone, resulting in its elongation as well as its thickening, so that added to a marked prominence over the joint there is a decided change in the direction of the articular surface, and a consequently increased valgus.

From this stage or degree on, the increased deformity is owing rather to pathological changes than to mechanical conditions. A chronic arthritis is established. The internal lateral ligament is stretched, the external one is contracted. The joint surfaces may become eroded or eburnated. The weakened support finally allows complete dislocation, so that the toe will lie at an angle, perhaps a right angle, across its fellows. The tendons will of course become displaced. Some surgeons have made the mistake of considering the displaced sesamoid bones (in the tendons of the flexor brevis) as the cause of the trouble and not as one of the results.

There is a general hyperplasia of all the tissues about the joint, besides the thickening of the bone itself. There is also a displacement of the metatarsal bone inward, so that there is quite a wide gap between the first and second bones.

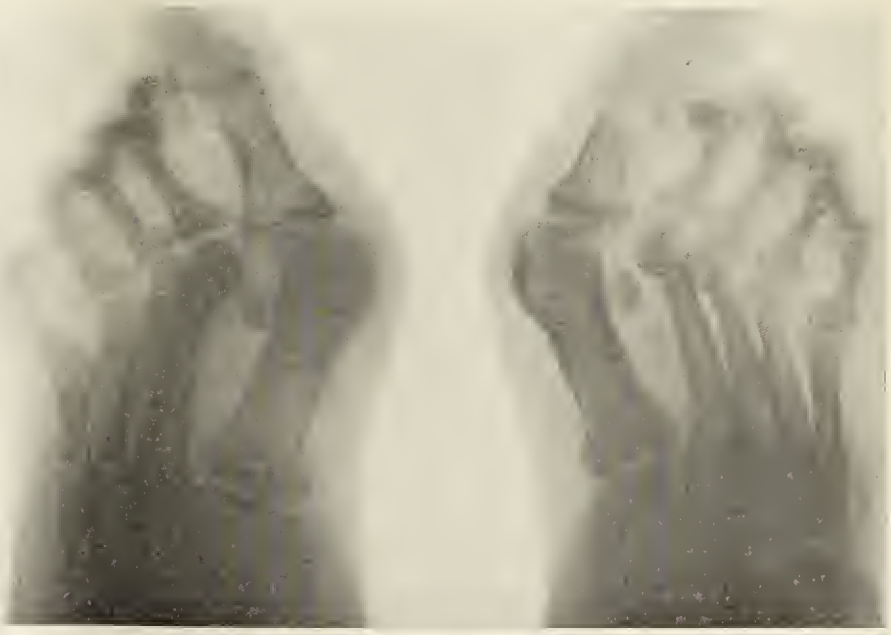

Fig. 2.—Shows: *a*, hypertrophied end of metatarsal; *b*, hypertrophied condyle on inner side of metatarsal; *c*, outward displacement of phalanx; *d*, inward displacement of metatarsal bone; *e*, partial dislocation of phalanx.

The bursa continues its annoying course, being the seat of a chronic remittent inflammation with severe exacerbations. When it becomes duly infected it will suppurate, and if not properly opened will infect the joint either by extension or by rupture into it. In some cases it will become the starting-point of a severe cellulitis of the foot and leg; in this manner it has proved fatal. There is usually a corn or callosity over the bursa, which acts in concert with the hypertrophied bone beneath it in making the patient miserable.

In many cases hallux valgus is associated with hammer-toe in the second and third digit, which results from the same cause.

In cases of long standing the joint may become fixed by a true or false ankylosis, and all the symptoms of the acute attacks may cease, nothing remaining but the deformity.

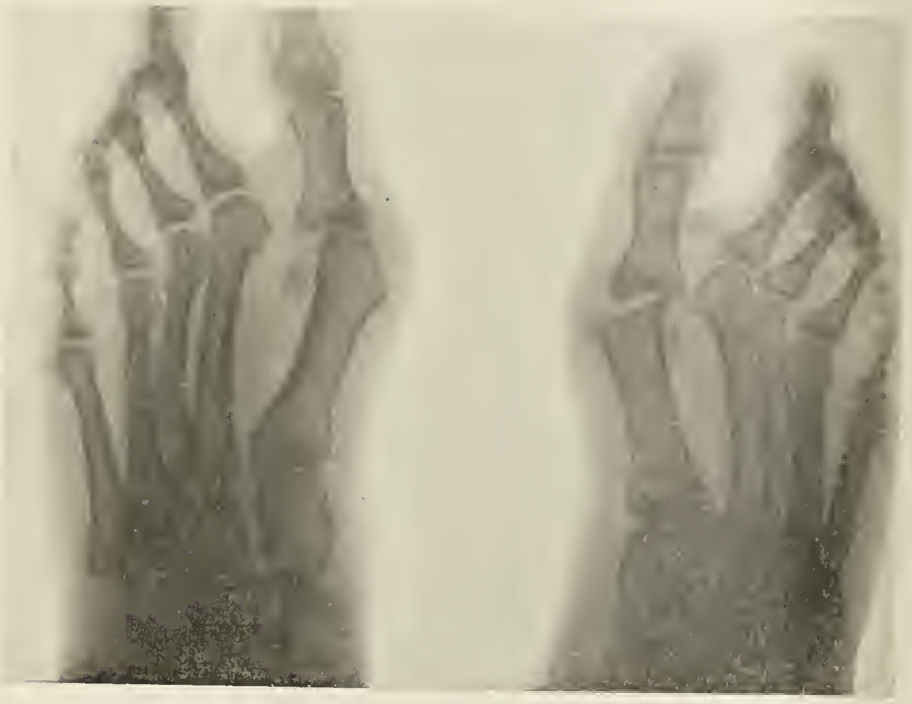

FIG. 3.—Skiagraph taken after operation in a case where there was—*a*, complete dislocation of phalanx; *b*, toe adducted to right angle to metatarsal bone; *c*, great hypertrophy of end of metatarsal bone; *d*, greatly hypertrophied "condyle" on metatarsal bone.

In Case III the clinical result was perfect as to shape and position of toe, cure of bunion, and restored function.

Operation was resection of head of metatarsal and of the hypertrophied lateral mass.

The deformity will depend upon the duration and severity of the case, and need hardly be further dwelt upon here. It is the outward expression of the anatomical changes already described. There will be added to this either complete or partial loss of joint function, always limited motion, joint crepitus, and tenderness.

The subjective symptoms consist in pain, tenderness, the consequent disability, and a peculiar shuffling gait. Of course, these conditions are exaggerated during an acute attack of inflammation, but except in cases of long standing in which ankylosis has taken place these patients are constant sufferers.

Very early cases may be relieved and farther progress stopped by careful attention to the shoes. A slight degree of deformity may be corrected by means of pads or splints which will place and retain the toe in its proper position; but a well-advanced case will not be cured by any means except an operation.

An acute attack of inflammation should be treated by rest, disinfection, and the application of such an evaporating lotion as the liquor aluminæ.

Probably viewing this disease from various standpoints has led surgeons to employ quite widely differing methods.

Ullmann * has advised a very elaborate procedure, consisting in arthrotomy, ablation of the sesamoid bones, and a transplantation of the tendons. Riedel † recommends a longitudinal osteotomy of the inner side of the metatarsal bone, and excision of the base of the first phalanx. Some have advised simple transverse or cuneiform osteotomy of the shaft of the metatarsal bone above, and not entering the joint. Fowler ‡ recommended a resection of the head of the metatarsal bone. He made use of the incision between the first and second toes, as devised by Peterson # for arthrectomy of this joint in cases of tuberculosis.

Dr. Robert F. Weir has recently described before the New York Surgical Society an operation similar to, but much more comprehensive than, the operation of Ullmann.

Most authors advise removal of the bursa by careful dissection.

My own experience with these cases has taught me to be guided by the following principles: First, to employ different operative procedures according to the degree and character of the deformity.

Second. Never to operate during an acute attack of inflammation.

Third. Always to treat the deformity, and never operate on the bursa, for it will take care of itself after its cause is removed. The exceptions to this rule are the removal of callosities from the bursa when they exist, and the incision of bursæ when they suppurate.

Fourth. Never to make the operation incision around the bursa or through the bursa for two reasons: first, because it would leave a scar where the shoe presses most; second, the operation would be through an area of infected tissue.

Fifth. Never use an Esmarch's bandage.

Sixth. Close the wound by suture, without drainage.

Seventh. Give careful attention to the after-treatment. Proper shoes must be worn, or a relapse will be probable.

I have found an incision about an inch in length on the dorsum of the toe thoroughly satisfactory. In a mild case, after retracting the tendon of the extensor proprius pollicis outward, I chisel off all the over-prominent portion of the inner side of the head of the metatarsal bone, removing as much bone as is necessary to do away with all protuberance. Then suture the wound and let it heal under one dressing. Usually the patient can walk about after the first week.

In more severe cases, where there is a marked adduction as well as lateral dislocation, I remove the head of the metatarsal with a chisel or bone forceps, and also cut off the prominent inner side of that bone. To resect the head of the metatarsal bone it will be necessary to divide the lateral ligaments and completely dislocate the toe. This can be done with ease and satisfaction through the simple straight incision I have described. It is necessary to remove so much bone that the toe will readily come into place and have no tendency to displacement. If this is not accomplished by the first ablation more bone must be removed.

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* *Wiener med. Wochenschrift*, 1894, No. 49, 2089.

† *Centralblatt für Chir.*, No. 44, October 30, 1886.

‡ *Medical Record*, 1889, vol. xxxvi, p. 253.

# *Archiv für klinische Chirurgie*, Bd. xxxvii, 677, 1888.

The dressing must be carefully made so as to hold the toe in good position. I always secure the toe by means of pads and put a plaster-of-Paris bandage over the entire dressing. I use catgut sutures, and leave the original dressing on two weeks. I encourage the patient to walk in the third week. For some time the toe will be liable to displacement, and a good result can not be expected unless the after-treatment is carefully carried out. In my experience it is seldom necessary to do this resection of the head of the bone.

A thorough removal of the inner "condyle" will cure the majority of cases. The skiagraph will show this to be the case. It will also show that the simple removal of the end of the bone is not sufficient; there must be a removal of all the overprominent lateral mass.

60 West Forty-seventh Street.

ON THE TREATMENT OF CHRONIC FRONTAL SINUSITIS

BY MEANS OF AN OPENING THROUGH THE ANTERIOR WALL OF THE SINUS, AND DRAINAGE THROUGH THE NOSE.*

By J. H. BRYAN, M. D.,
WASHINGTON, D. C.

In bringing this subject before the association again it is with the desire of trying to impress still further upon you the frequency of the anomalies that are met with in the fronto-ethmoidal and the fronto-maxillary regions; and also to direct your attention to a method of treating chronic suppurative inflammations of the frontal sinus which seems to shorten very materially the duration of this most obstinate disease. There is probably no affection in the whole domain of surgery that tries the patience and skill of the surgeon more than chronic abscesses affecting this cavity, especially when they also involve the ethmoidal region. When we consider the accompanying photographs, the wonder is not that they are so resistant to treatment but that recovery ever takes place.

With an increased knowledge of the anatomy of these cavities, and the advances that have been made in surgery, the success met with in treating these affections has, it may be said, kept abreast of the surgery of other regions.

Until within recent years suppurating frontal sinusitis has been considered to be an uncommon disease in this country, but since the frequent visitations of epidemic influenza the cavity involved, as well as the other accessory sinuses, are found to be very frequently affected.

The mortality of this affection is much greater than is generally supposed, owing to the ready extension of the morbid process to the brain.

The three sinuses, the frontal, ethmoidal, and maxillary, are frequently affected at the same time, having a common origin for their disorder in the extension of the pathogenic organisms of an influenza from the nose. In some instances one cavity, generally the frontal, is acutely inflamed in the course of an influenza, and the ethmoidal and maxillary are subsequently involved by an extension of the morbid process to them, which can readily take place owing to their very intimate relations and to the very thin bony partitions separating them. Again, the extension may take place through direct but anomalous passages which are occasionally found connecting the sinuses. This is especially the case in the relation of the frontal and maxillary cavities. In a previous communication I exhibited a drawing of an interesting preparation in the Army Medical Museum which showed a direct communication between the frontal and maxillary cavities, thus explaining the readiness with which abscess of the antrum could complicate a suppurative inflammation of the frontal sinus. I regarded this as a rare anomaly, for I could find no mention of this condition in the anatomical works consulted. Recently, however, I have read a paper by Dr. Fillebrown,* of Boston, who has made some interesting investigations on this subject. He states that he examined "eight different specimens in which the infundibulum, instead of terminating in the middle meatus, continues as a half tube, which terminates directly in the foramen of the maxillary sinus. In seven of these specimens there was a fold of membrane which served as a continuation of the unciform process, and reached upward covering the foramen, forming a pocket which effectually prevented any secretion from the frontal sinus getting into the meatus until the antrum and pocket were full to overflowing." In a private communication he further states that he examined fifteen more crania and found the infundibulum as described in his paper, and the pocket was present in all but two. This so-called anomalous condition, according to this authority, then occurs very often. As it has a very important bearing on the pathology of these cavities, it is a subject that should be still further investigated. Owing to the very intimate relation of the frontal sinus to the ethmoid bone, an involvement of the fronto-ethmoidal cells, or the cells formed by the union of these two bones, by an extension of the morbid process from the frontal sinus is of common occurrence. I believe in nearly all severe cases of empyema of this cavity the fronto-ethmoidal cells and the ethmoidal cells proper are involved to a greater or lesser degree.

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* Read before the American Laryngological Association at its nineteenth annual congress.

* *International Dental Journal*, 1897.

In approaching a case of frontal-sinus abscess, with the view of an external operation, great caution must be exercised by the surgeon, for the sinuses vary greatly in size, and the variation between the two cavities in the same subject is sometimes very marked. In nearly all cases in normal conditions they are separated by a sæptum, which in the majority of instances is complete, although the cavities occasionally communicate through a small opening. The sæptum is frequently not straight, deviating to one side or the other, thereby rendering one cavity smaller than the other, while in disease it is either entirely or partially destroyed.

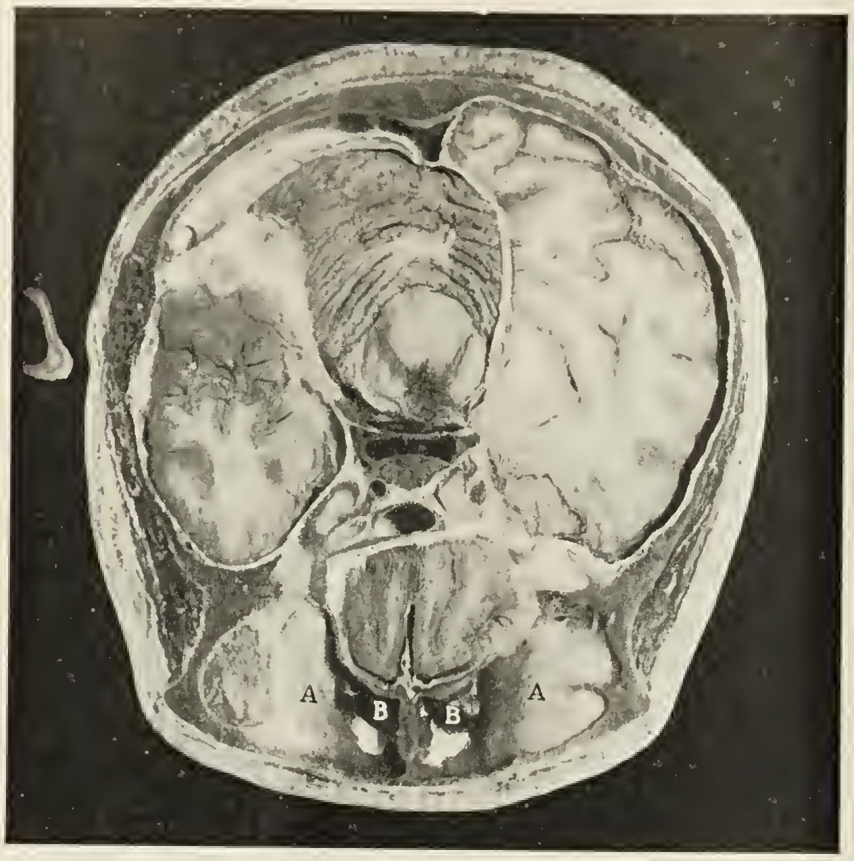

Fig. 1.—A, A, floor of frontal sinuses, which is observed to extend posteriorly to an unusual degree. B, B, anterior fronto-ethmoidal cells projecting into the sinuses.

There is no external sign which will enable us to ascertain the size of the sinuses, the prominence of the superciliary ridges being no guide as to the dimension of the cavities beneath them.

Herbert Tilley,* in an examination of one hundred and twenty skulls, found these cavities varying to a great degree. He found the sinus large enough in some instances to contain an ordinary bean, while the other was ten times as large, and occasionally the sinus was absent. He considers a sinus normal when it measures twenty-eight millimetres from the median line outward, reaching to about the junction of the inner and middle thirds of the supraorbital ridge; and in vertical extent, measured from the nasion, from twenty to twenty-two millimetres.

Lamb † has also made some measurements of these cavities which may be of some interest, as they are expressed in a different way. He states that he found the right cavity with a varying capacity from a third to a drachm and a half, or one and a third to six cubic centimetres, while that of the left cavity was from a third to a sixth of a drachm, or one and a third to four and two thirds cubic centimetres; as showing the difference existing between the two sides, he found in one case the left sinus was to the right as 70 to 95.

Fig. 1 is a photographic view of a frozen section of the head of an adult negress just above the floor of the frontal sinuses.

In this subject the size of the cavities is unusually large, and they project posteriorly to a greater depth than usual. Another interesting feature of this section is the development of the fronto-ethmoidal cells, the most anterior of which are seen to project into the frontal cavities.

Fig. 2 is a section made on a lower plane, passing through the ethmoid cells, and which shows very clearly the intricate arrangement of these cells.

Of the various methods proposed for the treatment of these chronic cases, the external method is generally conceded by most authorities to be the best.

The operation that offers the greater advantages is that proposed originally by Ogston,* and latterly independently advocated by Luc.† In this operation the incision is made in the median line, commencing at the root of the nose and extending from an inch and a half to two inches on to the forehead.

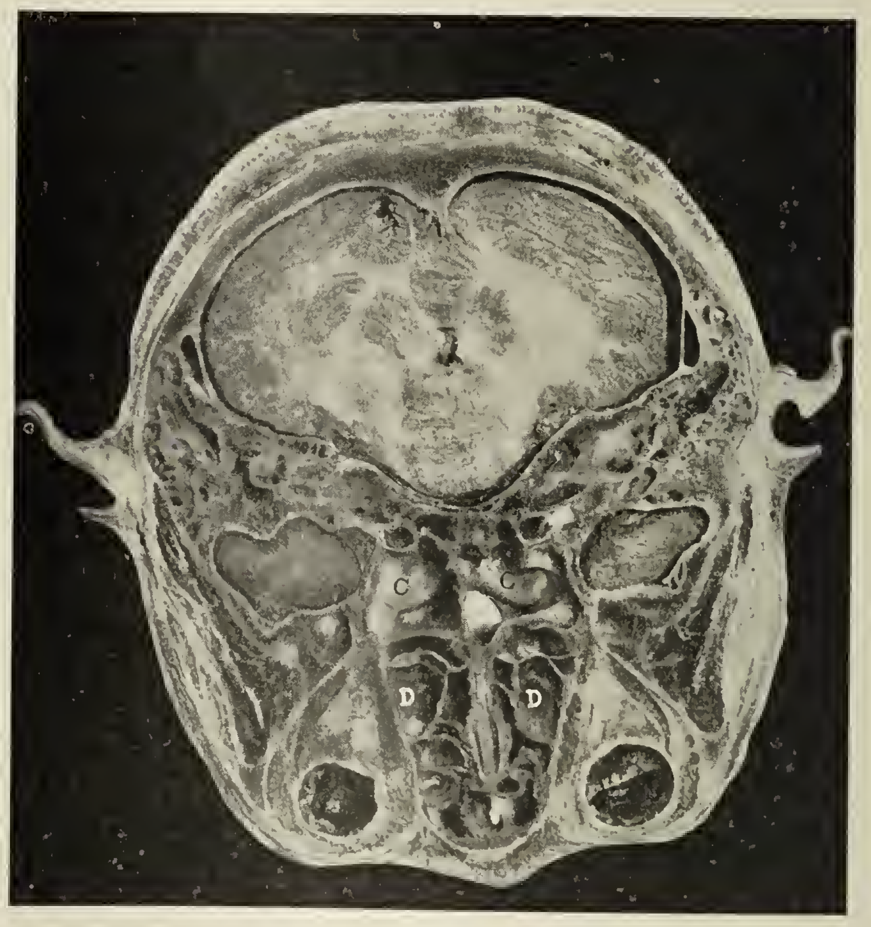

Fig. 2.—Showing the intricate arrangement of the ethmoid cells, with the posterior cells, D, D, unusually developed. C, C, sphenoidal sinuses.

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* *Lancet*, London, September 26, 1896.

† *Reference Handbook of the Medical Sciences*, vol. vii, p. 659.

* *Medical Chronicle*, December, 1894.

† *Archiv. internat. de laryngol.*, Paris, 1896, ix, pp. 163–178.

The skin and periosteum are elevated, and a centimetre of bone removed by means of a small crown trephine (Fig. 3) applied just outside of the median line and immediately above the supraorbital ridge. This opening will be found sufficiently large to allow of a thorough exploration of the sinus, and of the removal by means of the curette of any carious bone or polypoid tissue that may be present. The fronto-nasal duct should now be located with a probe, and enlarged by passing a trocar into the nose, using the little finger within the nostril as a guide. This duct is, as a rule, situated quite far back, and generally forms a large curve in its passage into the nasal cavity. If the trocar is passed into the nose at this point all danger of fracture of the cribriform plate of the ethmoid bone will be avoided, as well as the risk of septic infection.

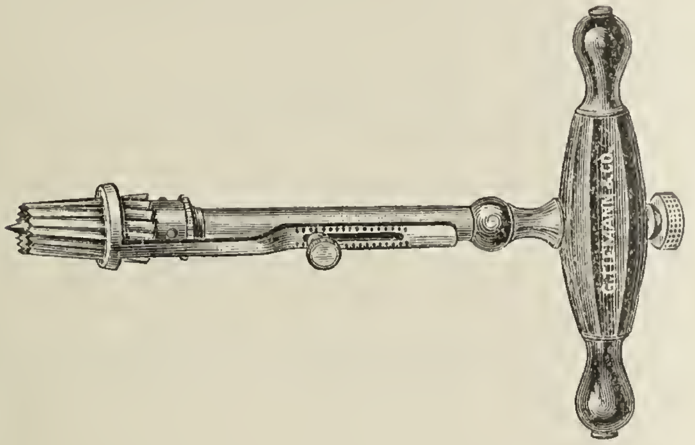

Fig. 3.

After thoroughly removing all diseased tissue and washing the cavity out with antiseptic solutions the lining membrane may be touched with a twenty-per-cent. solution of chloride of zinc. A self-retaining rubber drainage-tube (Fig. 4) should now be introduced through the enlarged fronto-nasal duct, and the wound closed by means of interrupted or subcutaneous sutures, and hermetically sealed with iodoform and collodion.

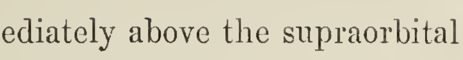

Fig. 4.

The following is a report of an instructive case, showing some of the difficulties met with in treating these very obstinate and serious conditions.

Mrs. ——, aged fifty-eight years, consulted me June 26, 1896, giving the following history: About two years ago she had a severe attack of influenza, which was prevailing at that time. The inflammation was confined principally to the upper respiratory tract. She suffered from excruciating headaches, the severity of which subsided as the inflammation grew less severe. The headaches have been continuous, however, being greater at times than at others, and they have been attributed to various ocular disturbances, which were not relieved by treatment.

She also complained of catarrhal symptoms, the secretions being thick and yellow and confined to the left side of the nose. When she came under my observation, June 26th, she had the following symptoms: Pain over the left side of the face, but of greatest intensity over the supraorbital ridge and at the internal angle; morning nausea, loss of appetite, and general lassitude. The facial expression was an anxious one.

On rhinoscopic examination pus was observed in the left middle meatus, passing freely into the nasopharynx and through the anterior nares. The middle turbinate was somewhat enlarged. Percussion on the frontal bone and over the canine fossa was accompanied by considerable pain. The electric light showed the left frontal and maxillary sinus to be opaque.

July 1st.—The left second upper molar tooth was extracted and a small abscess found at the apex of the palatine root, which, however, did not communicate with the sinus. The antrum was opened by means of a small trephine at this point and a large quantity of thick, fœtid pus evacuated. The cavity was irrigated daily with a saturated solution of boric acid and hydrogen dioxide. Under this method of treatment the inflammation in the antrum subsided within three or four weeks. While the quantity of secretion within the nose was somewhat reduced, the frontal headaches continued with about the same severity. Upon my return from my summer vacation, September 1st, I found the patient's condition about the same as when I left her on July 1st, with the exception that the frontal pains seemed to be more severe. On attempting to probe the fronto-nasal duct the anterior ethmoid cells were found to be in a state of caries, which condition did not exist or was not discovered when previous attempts at probing were made.

September 14th.—Curetted the anterior ethmoid cells, removing several large spicula of bone, which resulted in better drainage, with a slight abatement of the frontal pain.

October 10th.—During the past ten days there has been no improvement in the patient's condition; the frontal headaches have increased and are accompanied by nausea and vertigo. To-day, for the first time, there was detected a slight swelling of the skin over the left frontal region with some pitting on firm pressure. The patient's condition had now become so serious that an external operation was insisted upon.

13th.—After thoroughly cleansing the parts a vertical incision was made in the median line extending from the nasal boss to two inches on the forehead; the integument and periosteum were elevated, and a small button of bone about a centimetre in diameter was removed from over the frontal sinus by means of a crown trephine applied about two lines to the left of the median line and about three to four lines above the supraorbital ridge. After removing the bone with the trephine the cavity was found filled with a thick, fœtid, purulent secretion, and with numerous small granulations.

The cavity was thoroughly curetted and washed out with a solution of bichloride of mercury (1 to 3,000). It was then discovered that the posterior wall at its most dependent part was the seat of extensive caries, which was carefully removed with a sharp spoon. The sæptum was examined and found to be intact. The fronto-nasal duct, which was situated unusually far back, was enlarged by means of a trocar passed into the nose, using the little finger as a guide, and a drainage-tube was introduced through the enlarged opening. The external wound was then closed by means of a subcutaneous catgut suture, and hermetically sealed with iodoform and collodion.

15th.—The patient has fully recovered from the effects of the operation, and is quite comfortable, with no pain in the head. Temperature and pulse normal. The secretions are passing freely through the drainage-tube. The sinus was washed out with a solution of formalin (1 to 2,000). This application was attended with considerable pain, which, however, subsided in a few minutes.

The use of the formalin solution was persisted in notwithstanding the pain, as it was considered to be an ideal antiseptic for such cases, in view of its supposed penetrating qualities; but little benefit could be obtained from its use, as the secretions continued to flow through the drainage-tube in about the same quantity. The patient continued to do well until the morning of October 23d, when the drainage-tube slipped out of the nose. The cavity was, however, thoroughly washed out with the formalin solution through a Eustachian catheter. 8 a. m., temperature, 98°; 9 p. m., 100.6°. During the day she complained of great general discomfort and pain in the head. There was also noticed a slight puffiness of the skin over the opening into the frontal sinus.

24th.—The patient passed a restless and wakeful night, suffering greatly from hiccough, and complaining frequently of chilly sensations. 8 a. m., temperature, 98°. At 9 p. m. she had a severe chill, followed by vomiting. 11 a. m., temperature, 103.6°. She was given a brisk cathartic, and, after a thorough evacuation of the bowels, she received in a suppository ten grains of quinine every three hours, and half an ounce of whisky every two hours. The swelling over the frontal sinus was greatly increased and more painful. The iodoform and collodion dressing was removed, when an abscess was found to have formed in the lower half of the line of incision. This was thoroughly cleansed with hydrogen dioxide and dressed with iodoform gauze. The sinus was washed out with a saturated boric-acid solution and hydrogen dioxide. At 10 p. m. the temperature had fallen to 101.4°.

25th.—There was a decided improvement in the patient's condition this morning. The sinus and wound were treated as on the previous day. 8 a. m., temperature, 99.4°; 9 p. m., 100.4°.

26th.—Passed a good night; secretions from the frontal sinus very much diminished, and frontal wound healing, the margins of which were now drawn together with adhesive strips. 8 a. m., temperature, 99.2°; 9 p. m., 99.2°.

27th.—The temperature was normal this morning, and continued so during the rest of the patient's illness. Under the local application of the boric-acid solution and hydrogen dioxide the secretions from the sinus rapidly subsided. The frontal wound healed within ten or twelve days without leaving a very perceptible scar, the natural cleavage of the skin being a little more pronounced than originally.

The patient was practically well within six weeks from the date of the operation. The duration of her treatment might have been very much reduced had it not been for the unfortunate accident resulting in a slight septic infection. This infection can be accounted for in one of two ways. The operation was done in as thoroughly an aseptic manner as possible, but after the drainage-tube slipped out of the nose some retention of pus probably took place and the under surface of the frontal wound, which was in close proximity to the opening into the sinus, might have received some infection from the cavity, or the catgut suture employed may not have been absolutely sterile. I believe the infection took place from the sinus. All danger of retention could have been avoided had a self-retaining drainage-tube been used.

The operation offers many advantages over that of making the incision along the under surface of the supraorbital ridge and entering the sinus at the inner angle, in that the opening is made sufficiently large to permit of a thorough inspection of the interior of the cavity, and any diseased tissue, as carious bone, granulation or polypoid tissue can be thoroughly removed; the sæptum dividing the two cavities can be thoroughly inspected to ascertain whether it is intact, and a drainage-tube passed from the sinus into the nose without any danger of injuring the cribriform plate of the ethmoid bone.

The method of treating empyema of this cavity by passing a drainage-tube through the frontal opening into the forehead leaves a very unsightly scar, and occasionally the patient recovers with a fistulous opening in the forehead.

A UNIQUE CASE OF INTESTINAL FISTULA.*

By LUCIUS W. HOTCHKISS, M. D.

Minnie S., twenty-five years of age, single, a factory girl by occupation, was transferred in the ambulance from the Magdalen Home to the J. Hood Wright Memorial Hospital on January 10, 1897.

She had been a patient during the service of one of my colleagues about a month before, and had been discharged December 15, 1896.

At this time she was suffering from a severe attack of intestinal colic and from an ulceration of the skin over the site of an old ventral hernia in the median line of the abdomen, below the umbilicus.

She said she had been operated upon four separate times between 1890 and 1894, and that both ovaries had been removed. As a result of these numerous operations a ventral hernia had developed. An attempt to relieve this by operation was made in 1895, but with what degree of success does not appear from the patient's statement. In 1895, after lifting a heavy weight, one of the old scars in the abdominal wall broke open, and, according to her statement, some intestine escaped. This was replaced and the wound sutured, but the hernia remained. She has worn an abdominal supporter since then, and has been fairly comfortable except for occasional attacks of abdominal pain. Just before the time of her first admission to the hospital an abrasion of the skin over the hernia had become infected and an ulcer formed. As a result of rest in bed and local treatment the ulcer had healed and the patient was discharged.

She remained well until about a week before the date of her second admission to the hospital, when an abrasion again appeared in the skin over the ventral hernia, which seemed to be due to the irritation of the supporter. This abrasion did not heal, but became infected and formed an ulcer which discharged a little pus but did not trouble her otherwise, until, on the day before admission, while engaged in shaking a carpet, she felt something give way at the seat of the ulcer. On examination she found the ulcer torn open and bleeding very freely. She went at once to bed, but lost considerable blood from the ulcer during the rest of the day and night. The next morning she was transferred to my care in the hospital. On admission the patient complained of severe colicky pains in the abdomen, of general abdominal tenderness, which, however, was especially marked in the right iliac region, and of pain in the back.

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* Read before the Society of Alumni of Bellevue Hospital, May 5, 1897.

There was some slight tympanites, and the patient had had two or three loose movements and passed considerable quantities of gas at intervals, which relieved her pain somewhat. While coughing, some bubbles of gas were observed to escape from the bottom of the ulcer.

The abdomen was not distended, and there was no diminution of liver dullness. Heart and lungs negative. Urine contains no albumin. Temperature, 102° F.; pulse, 100; respiration, 30.

An examination of the abdominal wall revealed an area of very thin, parchmentlike skin of about the size of the palm of the hand and bounded laterally by perpendicular scars, which resembled false keloid in appearance. This thinned, pigmented area of skin lay below the umbilicus in the middle line and formed the outer covering of a fair-sized ventral hernia. The fingers could easily be pushed between the widely separated recti muscles, and the intestines plainly felt through the thin cicatrix to which they seemed adherent beneath.

The ulcerated surface was at about the centre of this area and a few bubbles of gas were seen escaping, though no communication with the intestine was at this time demonstrated. The patient was kept quiet in bed. Morphine was administered and the ulcer dressed with sterile gauze.

January 11th.—After giving an enema the dressings were found saturated with a dark-brown fluid. Temperature went to 101.4° in the afternoon, and there was considerable abdominal distention with tenderness in the upper part of the belly, *i. e.*, in the epigastric region. By the 16th the pain had considerably diminished and the temperature had reached normal. Her condition generally had improved. On the 20th, 21st, and 22d the patient had a great deal of abdominal pain again, and considerable morphine was used to give her relief.

The fistula continued to discharge rather profusely, and the skin became excoriated. On the 22d the dressings were saturated with blood. On the 24th a formed fæcal movement was found in the dressings. On the 26th particles of matter, thought to be partially digested food, were discharged through the fistula. As the patient seemed to be steadily losing ground, and as the mucous membrane of the underlying intestine protruded from the wound, there was thought to be very little chance of effecting a closure of the fistula by conservative means. The opening into the gut, moreover, was flush with the skin and would readily admit the finger. The patient was very anxious for an operation, and this was undertaken with a view of closing the intestinal fistula and at the same time accomplishing, if possible, the radical cure of the ventral hernia.

28th. Resection of Gut; Circular Enterorrhaphy (Maunsell's Method); Repair of Ventral Hernia.—The patient having been anæsthetized with ether, the fistulous opening into the gut was stuffed with sponges and the surrounding area of skin thoroughly cleansed. An elliptical incision wide enough to include the fistula and all old scar tissue—*i. e.*, about four inches and a half by three inches—was made and the peritoneal cavity opened. The loop of intestine in which the fistula was situated was firmly adherent to the overlying cicatrix for a distance of about two inches and the opening in it was too large to admit of any operation short of resection and suture. To the loop of gut just described were adherent two other portions of intestine, but the adhesions were not very firm and were easily separated, being apparently of recent origin. The intestines generally in the neighborhood were tied together with firm adhesions, most of which were left undisturbed.

The affected portion of gut (ileum) having been pulled out and isolated, and the peritoneal cavity protected by gauze pads, a piece about four inches in length was excised. The cut ends were joined together after the method described by Maunsell, and a few additional Lembert sutures were used. The sutured gut having been washed with peroxide of hydrogen and afterward with hot sterile salt solution, was dropped back into the peritoneal cavity. A flat gauze pad having been introduced into the abdomen to hold back the intestines, an attempt was made to do a radical operation for the relief of the hernia. The edges of the recti were found widely separated and buried in cicatricial tissue. They were exposed with some difficulty, and their broad freshened edges brought together by heavy catgut sutures.

The superficial structures at the upper end of the wound came together nicely. Below, the skin edges would not meet without too great tension. The lower end of the skin wound was accordingly left partly opened.

The patient rallied well from the operation. There was very little shock.

For the first forty-eight hours she was fed by the rectum; after that, fluid diet was allowed. On the 6th of February all superficial sutures were removed. Union in the deeper parts seemed firm. Lower part of skin wound granulating aseptically. By the 21st the wound had closed. On the 6th of March the patient was discharged "cured," the wound firmly united throughout, and no evidence of hernia at the site of operation wound.

The wound pursued an aseptic course throughout, and, although the patient's convalescence was disturbed by frequent attacks of abdominal pain, these became less as time went on, and at the time of her discharge the patient was free from them. The numerous adhesions between the coils of intestine evidently disturbed peristaltic action and will perhaps explain the severe colics to which she was subject.

Although ulceration from within the gut is described as one of the frequent causes of fæcal fistula, ulceration from without, involving the intestinal wall and leading to the formation of fistula, must be very rare. In this respect at least the case seems to be unique and worthy of record.

The skin which covered in the ventral hernia in this case was so very thin and the intestine beneath so adherent that any ulcerative lesion affecting the former would be bound to involve the latter unless its course was checked. It is possible to explain the formation of fistula in this case, I think, by assuming that the intestinal coat was more or less involved by the extension of the ulcerative process from the skin, and that the strain which opened up the ulcer may also have partially ruptured the gut.

The ulcer was evidently the result of simple pyogenic infection through an abrasion, and its extension due to the lack of vitality in the thin cicatrix. The case has interested me very much, and so far I have been unable to find the description of one exactly similar.

49 WEST FIFTIETH STREET.

ON SEVERAL CASES OF APPENDICITIS.*

By A. BROTHERS, B. S., M. D.

WITHIN a few weeks of each other I recently met with several cases of appendicitis so different in character that I trust you will pardon me for describing them in brief. The subject of appendicitis is one of fascinating interest, and, although very much has already been written, there is still a feeling of uncertainty as to the exact limitations of the medical or surgical management of this disease. Any contribution which tends in the slightest degree to more sharply define these boundary lines must be of value.

CASE I.—Mrs. D., aged thirty years, called at my office on March 15, 1897. According to the history she was married at seventeen, gave birth to one child, and separated from her husband four years later. Since that time she has worked out for a livelihood. Three years ago she was operated on at Bellevue Hospital for some uterine trouble. Several weeks prior to her visit to my office she complained of uncomfortable sensations about the abdomen, principally on the right side. At no time were these pains sufficiently intense to force her to bed. She was simply incapacitated from attending to the heavy work of a servant.

I made a careful examination, excluded annexal disease, and located distinct tenderness over McBurney's point. I sent her to Beth Israel Hospital to try the effect of rest in bed and medical measures—such as the continuous use of an ice-bag, liquid diet, and mild purgation. After a week's observation, with the patient perfectly quiet in bed, there was no change. Although there was at no time any appreciable elevation of temperature or any evidence of tumor, the localized tenderness over the appendix persisted. She was advised to go home in the hope that this tenderness would gradually wear away, but was warned to immediately report in case of any exacerbation of the pain. On leaving the bed she complained that her pain was as bad as ever and, as she had to work for a living, she implored me to operate at once. To this I finally consented.

On March 23, 1897, under ether, I made the usual incision. On opening the peritoneal cavity I found it impossible with the sense of touch to locate the appendix. On exposing the cæcum and following downward the striated fibres, I discovered the ulcerated stump of the appendix, about three quarters of an inch in length, and buried in adhesions. With fine silk it was ligated close to the cæcum and removed. The wound was closed without drainage—the peritonæum, fascia, and integument being sewed up separately. There was absolutely no reaction, and the wound healed by primary union. On the eighth day the patient was sitting up in bed, and on the fourteenth day she left the hospital cured.

CASE II.—Abraham R., aged sixteen years. At the City College on March 30, 1897, he was taken sick with a sudden attack of abdominal cramps. During this day and the next he was treated for colic by a medical student and his mother. He was given calomel and castor oil. As his condition seemed to grow steadily worse, I was sent for on April 1st and found him suffering from an acute attack of appendicitis, with tenderness well defined over McBurney's point. During the third and fourth days of the disease the temperature (axillary) ranged between 99° and 102° F., with a pulse of 100 to 120. Pain continued localized without any evidence of a tumor. Expectant treatment was followed—chiefly the continuous application of an ice-bag to the appendicular region, horizontal decubitus, and an occasional small dose of morphine. On the fifth day—without any change in temperature or pulse—I noticed a beginning tumefaction of the abdomen, and with this a tendency of the hitherto localized tenderness to spread itself across the median line to the opposite side. In spite of the unchanged condition in the patient's pulse and temperature, in spite of the persistence of the local pain, in spite of a complete absence of symptoms indicating shock, I advised an immediate operation, and solely for the one reason that there was present beginning tympanites, with a tendency toward extension of the hitherto localized tenderness. A consultation was requested, and within several hours my friend Dr. H. M. Silver responded. He coincided with me in the necessity for prompt surgical intervention, and kindly supervised the operation an hour later at Beth Israel Hospital.

On making the usual incision, the gangrenous appendix—rigid, and about two inches in length by half an inch in diameter—was, after a little search, found floating in thin pus at the lower angle of the wound. Excepting a few recent adhesions to the right, there was a free communication with the general peritoneal cavity in all other directions. After mopping up the pus—probably not more than an ounce—and temporarily isolating the appendicular region from the general peritoneal cavity by means of strips of iodoformized gauze, the appendix was amputated. On inspecting the stump it was found possible to strip it a little farther backward and remove the remaining portion just at its origin from the cæcum. This explains why the specimen presented to-night consists of two portions. The appendix stump and the adjacent area whence the pus had come were touched with peroxide of hydrogen. The gauze strips were removed and replaced by fresh ones introduced above, below, and to the left between the folds of intestine. A central strip was passed directly down to the stump of the appendix. By the use of appropriate medication the bowels were made to move after twenty-four hours. After thirty-six hours the dressing was changed. At no time after the operation did the temperature exceed 100° F. or the pulse count above 90. After the second week the boy was out of bed, and at the end of the third week the granulations were continuous with the surrounding surface of integument.

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* Read before the Society of Alumni of Bellevue Hospital, May 5, 1897.

Case III.—Mrs. Taube G., aged twenty-eight years; washerwoman. Menstruation began at the age of thirteen and was always regular. For the past two years it has been associated with pain. She was married at sixteen years, gave birth to three children, and has been a widow for five years. She entered Beth Israel Hospital on April 8, 1897, to be treated for pain in the right iliac region, which for some time previously had incapacitated her from earning her livelihood. On examination the uterus was found to be normal. The left annexa were readily felt and presented nothing abnormal. On the right side the appendages could not be located by bimanual examination on account of the abdominal rigidity excited by pressure. The painful area, however, was not in the pelvis but higher up, and located directly over the region of the appendix—over McBurney's point. After several days' observation, during which there was no elevation of temperature or any change in the local conditions, it was decided to perform an exploratory laparotomy.

On April 16, 1897, an incision about two inches in length was made in the right inguinal region above and parallel with Poupart's ligament. On opening the peritoneal cavity the finger introduced into the wound over the site of the appendix discovered a cystic ovary—globular, tense, and about an inch and a half in diameter. The adhesions, if any, must have been very slight, for the tumor was readily brought out of the wound. During manipulation the cyst burst. The Falloppian tube was examined and found to be normal. It was therefore decided to only remove the diseased ovary. After replacing the tube with the ovarian stump the appendix was next brought out of the wound and examined. It seemed to be free from adhesions and to all appearances perfectly normal. Hence it was dropped back without further molestation. The peritonæum was closed with fine catgut, the fascia was united with chromicized catgut after Noble's method, and the integument was brought together with silkworm gut, using the subdermic continuous suture. After the operation the temperature never rose above 100.8° F. nor the pulse above 88. The bowels moved on the third day under appropriate medication. On the ninth day there was complete primary union of the wound, and at the end of fourteen days the patient was allowed to sit up in bed.

The three cases seem to me of interest as a group representing two extreme varieties of appendicitis with an illustration of the manner in which the disease may be simulated by other conditions. The last case proves how appendicitis lies on the border line between general abdominal surgery and gynæcology.

I had intended to close my paper at this point, but another case came under my care on very short notice, and I trust you will pardon me for imposing on your good nature and allow me to illustrate by it one other variety of appendicitis.

Case IV.—On May 1, 1897, I went on service at the New York Frauenklinik, and at the time of my visit I was requested by my predecessors, Dr. L. J. Ladinski and Dr. E. Sternberger, to take charge of an urgent case of recurrent appendicitis with probable periappendicular abscess in one of our nurses. She had been operated upon about a year previously by one of my colleagues at the Beth Isreal Hospital in my presence, at which time, owing to her debilitated condition, it was deemed sufficient to evacuate the pus and excise the most accessible portion of the gangrenous appendix. She made a good recovery, and up to two days previously she enjoyed tolerably fair health and attended to her duties as a nurse. Acute pain suddenly returned, and with this temperature and localized tumefaction. I saw her about forty-eight hours after the first symptoms of the relapse and coincided with the views of my colleagues that there was no time to be lost.

With a temperature of 102° F. and a very rapid pulse (at one time 160 in a minute) she was put under the influence of ether anæsthesia and an incision parallel to the former scar was made. There was considerable difficulty in getting into the peritoneal cavity, because of the adhesions of the gut to the abdominal wall resulting from the former operation. After half an hour's work, however, this was accomplished. At one point it was necessary to cut through contiguous adherent structures in the abdominal wall in order to avoid tearing a hole into the intestine. After separating adhesions binding the coils of intestine to each other a small abscess was found behind the cæcum. This must have contained about half an ounce of pus. The surrounding gut was separated for several inches in different directions, but no other pus collections were met. The stump of the appendix was examined and a perforation found just at its point of origin from the cæcum. It was removed after ligating its base, and the remaining fragment was cauterized with pure carbolic acid.

At the close of the operation the patient's condition was better than at the beginning. After twenty-four hours the temperature had remained below 101° F., and the pulse at about 120. The bowels had moved slightly after the use of calomel, sulphate of sodium, and enemata. At the end of forty-eight hours the dressing was changed and the wound had a healthy appearance. She now presents every indication of a speedy recovery.

While appreciating that nothing new has been brought out by the description of these cases, I can not help but feel that it must be of interest for one practising gynæcological surgery to meet four different types of appendicitis cases in almost as many weeks. As I grow older in surgical experience, it seems to me that appendicitis becomes less and less of a medical disorder and more and more surgical in character. I do not deny that there are cases of appendicitis which yield to rest in bed, combined with the local application of ice. But I have known several cases to require secondary operations in later years. I know also of one case of recurrent appendicitis proving fatal during the second attack.

The first two cases described to-night represent extreme varieties of appendicitis. The first patient was a "walking case," and her trouble was diagnosticated as an ordinary form of "catarrhal appendicitis." The operation demonstrated the existence of ulcerative and periappendicular inflammatory processes. Still, I am willing to concede that even without operation she might have gone on to spontaneous recovery. In the second case, however, the utter uselessness of medical treatment after the fourth or fifth day of the disease was clearly proved. The boy's life was certainly saved by prompt surgical intervention.

The third case illustrates how a diseased ovary located in the region of the appendix led to an error in diagnosis. The treatment, however, was justifiable, as the inguinal incision not only permitted of a careful examination of the normal appendix, but also of the proper treatment of the diseased ovary.

The fourth case was operated within forty-eight hours of the onset of the attack. An ulcerating stump was discovered with a pus cavity. It proves the justifiability of such extremely early surgical intervention. Still, I believe that such cases must be excessively rare.

GAS IN ABDOMINAL TUMORS.*

By HAL C. WYMAN, M. Sc., M. D.,

PROFESSOR OF SURGERY, MICHIGAN COLLEGE OF MEDICINE AND SURGERY, DETROIT.

Those well-known micro-organisms, called pneumogenic bacteria, have been so often described, and so much is said and written about abdominal surgery, that it may not interest the members of the Upper Peninsula Medical Society to hear something of their relations to the tumors which appear in the cavity of the abdomen; but at the risk of presenting a hackneyed subject, I will speak of the matter generally under two heads—viz.: First, the relations of gaseous tumors in the abdomen to diagnosis, and second, the treatment of them.

The yeast microbe, in performing the cycle of its life, breaks up sugar into alcohol and carbonic acid. Urea, in the presence of certain bacteria, separates into ammonia and carbonic acid. More stable compounds may, by the presence of bacteria, be caused to yield quantities of sulphureted hydrogen. These statements are made to illustrate the fact that gaseous bodies may sometimes be of bacterial origin. A quantity of pus, accumulated in a close capsule or inflammatory investment, may be broken up by the presence of pneumogenic bacteria and form a gas which will distend the limiting capsule and thus give rise to a tumor which will yield on percussion a distinct tympanitic note. In gangrene following intense inflammation—for example, in cases of acute progressive purulent infection—it is not unusual to recognize the presence of gas in the diseased area by the peculiar crackling or crepitation caused by infiltration of the connective tissue with gas. In the retroperitoneal and circumrectal spaces it is not unusual to find accumulation of gas in the course of severe infections, such as accompany cases of infiltration of urine and fæcal gases into the parts. In the process of digestion it is not unusual for gaseous bodies to distend the intestines more or less, and varying degrees of this process give us the distressing symptoms known as flatulence, borborygmus, etc. There is every reason to believe that the human body in disease furnishes the materials and conditions essential for the formation of gaseous compounds, which are not unusual in the natural cavities of the body, but may occur in the tissues adjacent to the great vessels, muscles, fasciæ, etc.

In morbid growths—tumors of inflammatory origin affecting the abdomen—gas may occur as a part of the tumor and cause a complication which seriously menaces the patient and which embarrasses the diagnosis and hinders the treatment. To illustrate these statements I wish to quote from my notes the following cases:

Mrs. G., aged forty-two years, married, no children, no pregnancies, was in good health until about two years ago, when she had an attack of severe pain in the right inguinal region, following menstruation. She also had fever, and was confined to her bed for several days and lost much in weight. Convalescence was uninterrupted and she enjoyed good health until about six months later, when she was traveling in Ceylon, she had a second attack of pain and fever which prostrated her for three weeks. The pain and tenderness were located over the whole lower abdomen. The bowels moved with great difficulty; her physician pronounced the case peritonitis. She convalesced slowly, had pain with each menstrual period, and was unable to continue her journey. Returning home to America, she consulted a physician, who thought he discovered a fibroid of the uterus and advised its removal. There was steadily increasing distention of the abdomen, a peculiar sickly, sallow complexion, and at times fever and loss of appetite. When she came under my care, about three weeks ago, she was greatly emaciated, had a feeble and irregular pulse, constipated bowels, sickly, cachectic complexion, abdomen swollen like that of a woman in the last month of pregnancy, but tympanitic in every part. Percussion did not yield a note indicative of a solid or fluid tumor. Vaginal and bimanual examination revealed the pelvic viscera fixed and immovable by inflammatory deposits about them. The pouch of Douglas contained a semisolid mass which, however, could not be made to change its position no matter how the patient was moved about. It was evident from her general condition that the constant fever, which had been ranging from 101° to 103° for six months, was soon to culminate in collapse, unless something could be done to remove the cause of fever and sickness. She had been constantly under medical care for more than a year and a half, but without receiving any general improvement in health. She had been informed that her disease was almost everything which could affect the viscera of the abdomen, and she had taken countless alleged remedies to relieve the distressing gaseous distention. She was reluctant to submit to the abdominal section I proposed, but consented. Under chloroform anæsthesia the abdomen was opened from the umbilicus to the symphysis. On reaching the cavity of the peritonæum, a tumor, elastic and tympanitic, could be felt, occupying the whole of the pelvis and the greater part of the abdomen. It was slightly adherent to the parietal peritonæum in front, and was so intimately blended with bladder, intestines, uterus, ovaries, and tubes that its extirpation was impracticable. By careful manipulation it was found to contain a large quantity of gas, together with some semifluid substance which gravitated to the dependent parts of the tumor. Its origin was apparently from behind the peritonæum and right broad ligament. Incision was made into its anterior wall while it was drawn well foward, so that the gas, which poured out with prolonged hissing noise and fœtid, sulphurous smell, could not enter the peritoneal cavity. After the gas came a pint or more of very thick, greenish pus, which was more like putty than ordinary pus in consistence. An attempt was now made to separate the sac from its attachments to the viscera, but it was found to be impracticable. It was drawn well forward, and the margins of the wound in it were fastened by continuous catgut suture to the parietal peritonæum. Then the remainder of the wound in the abdominal wall, including the peritonæum, was closed with interrupted sutures. This left an opening through the abdomen into the tumor about two inches and a half long. The cavity of the abscess was packed with iodoform gauze after being cleaned by repeated mopping with gauze. The usual protective dressing was applied, and the patient put in bed. She rallied promptly, notwithstanding her extreme feebleness and the prolonged operation. The viscera were exposed, more or less, during the operation, for upward of thirty minutes, and this delay was owing to my inability to satisfy myself that the gas which escaped from the tumor did not come from a loop of intestine involved in its walls. Since the operation the patient has steadily improved, and is now fairly on the way to sound health. About a week after the operation much thinner pus discharged and a drainage-tube was introduced. The abscess cavity is now almost closed and holds but about an ounce of fluid, as measured by injection.

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* Read before the Upper Peninsula Medical Society, at Sault Ste. Marie, Mich., July 9, 1897.

Mrs. H., aged thirty-eight years, mother of eight healthy children, always enjoyed good health, German. Had a left femoral hernia appear about four years before she came under my care. One year before I saw her the hernia became strangled and was, after some delay and great difficulty, reduced by taxis. She was sick in bed for about a week at that time and received the doctor's attention every day. Then her health was as good as usual, with the exception of constipation, which made necessary the daily use of Epsom salts. Gradually, however, her abdomen began to enlarge, and in the course of several months became distended to the size corresponding to full-term pregnancy. She was also compelled to keep up a diarrhœa with cathartics or suffer from unbearable constipation and colicky pains. She had lost in flesh until emaciation was extreme and there was severe vomiting of greenish, slimy matter and food when the attacks of constipation prevailed. Physical examination revealed an evenly rounded tumor occupying the abdomen, and on percussion it was tympanitic over the entire area. The uterus and appendages were normal and mobile to the vaginal touch. There were no indications of anything but a gaseous tumor. When the bowels moved freely there was no apparent diminution in its size, and at no point could fluctuation or flatness be detected. I advised and performed abdominal section and found about six feet of the upper jejunum distended to about three inches in diameter, and suddenly below this distention the jejunum was constricted for about four inches, and from there down the intestines were collapsed. The constricted portion of the bowel was involved in cicatricial tissue and had evidently been injured by the hernia. The lumen of the intestine at this point was about sufficient to admit the passage of a match. The distended part of the intestine had its mesentery adherent by inflammatory bands to the constricted portion. There were no other lesions. With difficulty the adhesions about the constriction and mesentery were separated. Three inches of bowel were then incised above and below the constriction. These two wounds were sutured with continuous catgut in such a way as to make a channel three inches long from the distended gut above the stricture to the collapsed intestine below it, shutting off the constricted bowel from the full current of the intestinal stream.

The wound in the abdomen was now closed. The distended intestine collapsed, so that there was no difficulty in bringing the margins of the abdominal wound together and fastening them. The recovery of the patient followed forthwith and was not embarrassed by any abdominal distentions, colicky pain, constipation, or indigestion.

These cases serve to establish two points—viz.: 1. There are cases of suppurating tumors or abscesses in which gas may cause so much distention of the abdomen that the signs which commonly make necessary an abdominal section are in part wanting. 2. An abdominal section should follow when the gaseous or tympanitic tumor is persistent and does not disappear with catharsis, and the other signs essential to an operation are present. Phantom tumors, spurious pregnancies, etc., can not be confused with true gaseous tumors, because of the absence of hysterical features, neuroses, and the persistency of the tumor. Among the causes which may be submitted in explanation of these singular tumors, or rather these singular features of abdominal pathology, are the presence of pneumogenic bacteria and an anatomical relation to the alimentary canal. In the second case cited in this paper the great distention of the intestines was doubtless due to three causes—viz.: (1) Obstruction caused by stricture; (2) paralysis of certain nerve fibres passing to the intestinal wall, by inflammatory adhesions binding the parietes of the intestine to the mesentery; (3) gas resulting from chemical and biological changes in the intestinal contents. In the first case here quoted it is possible that the tumor was in some way, perhaps through the appendix, connected with the alimentary canal, although it was impracticable for me to locate the appendix vermiformis. However, in certain other cases of intraperitoneal abscess complicated by the presence of gas, I have had no difficulty in tracing the relation of the gas to a perforated appendix, and the fact that no gas has bubbled from the tumor since the operation is good reason for thinking that if a communication existed with the bowel at one time it has long since closed.

Bellevue Hospital.—Dr. Charles E. Nammack has been appointed visiting physician to the non-collegiate division.

CHRONIC PAROXYSMAL HEADACHE,

COMMONLY CALLED MIGRAINE, HEMICRANIA, OR SICK HEADACHE.*

By GUSTAVUS ELIOT, A. M., M. D.,
NEW HAVEN, CONN.

The word headache, used without further qualification, indicates not a definite disease, but a symptom which is associated with many diseases and disturbances of function. This use of the word somewhat resembles the use of the word fever, which, used without qualification, also indicates a symptom common to many diseases, but qualified by certain adjectives is used to indicate certain definite diseases, such as typhoid fever or scarlet fever, of which fever is a prominent symptom. In medical literature and medical discussions the word headache is frequently used, as if pain in any part of the head were a distinct disease, without any regard to the causes which produce it, the particular part of the head affected, its persistency, or the frequency of its recurrence. The object of this paper is to recall the distinguishing characteristics of one form of headache which seems to be entitled to rank as a distinct disease of the nervous system.

Headache is a common symptom of many general febrile diseases, and of many local inflammatory affections. It is symptomatic of toxæmic conditions, as in nephritis and disorders of the digestive organs. It may occur as a form of neuralgia. It sometimes is a symptom of abnormal ophthalmic conditions, especially of errors of refraction. It often is a symptom of catarrhal inflammation of the mucous membrane of the air-passages, and especially of the frontal sinuses. It may be the result of unnatural activity of the nerve cells of the brain, as in the so-called congestive headache. It may be the result of inadequate nutrition of the brain, as in the so-called anæmic headache. It may be a reflex manifestation of disorders of distant organs, as of the uterus. Finally, cases are observed in which headache occurs which can not be classified in any of these varieties.

Many individuals suffer from a headache which comes on at irregular intervals, which affects chiefly a part or the whole of one side of the head, which lasts from several hours to two or three days, and which can not be definitely connected with any clearly recognized cause. Such a headache may fairly be considered idiopathic, for it does not seem to have any constant relation to any definite pathological condition or functional disturbance.

In order to avoid being hampered by any preconceived notions suggested by the names in common use, and on account of the fact that these headaches occur at irregular intervals extending over many years, there is considerable propriety in calling the disorder in question chronic paroxysmal headache. This form of headache is commonly called migraine, megrim, hemicrania, sick headache, bilious headache, nervous headache, or neuralgic headache.

The *symptomatology* of these headaches is not unfamiliar to you. The pain may come on during the night, waking the patient up, or it may be present when the patient wakes at the usual hour in the morning, or it may come on during the day. Its duration is very variable. It may last for several hours, or for two or three days. It may occur at intervals varying from a few hours to several weeks or months. Vomiting may precede its final disappearance, which frequently occurs as the patient falls asleep. The pain is usually limited to a part or the whole of one side of the head. It usually begins and is worse in a particular part of one side—the temporal region, perhaps, being most frequently affected. Either side of the head may be affected in different attacks in the same individual, although it commonly happens that in each individual one side is more frequently affected than the other. Sometimes the skin of the face and head on the affected side is pale and cool and the pupil contracted. In other cases the skin is red and hot, the arteries pulsate more strongly than usual, and the pupil is dilated. The pulse frequently is slow, full, and hard. The onset of the headache is frequently preceded by ocular disturbances, seeing of spots or lines of light, and sometimes hemianopsia.

The *ætiology* of these headaches is somewhat indefinite. In many who suffer from them there is an inherited nervous diathesis. A family history of headaches, neuralgia, hysteria, epilepsy, or insanity can frequently be elicited.

Case I. *Chronic Paroxysmal Headache, illustrating the Influence of Heredity.*—Mrs. H., aged forty-four years; widow; dressmaker. Has sick headaches which always come on the right side and never on the left side. The pain is chiefly over the right eye, but covers the whole side of the head. Sometimes, but not often, before the headache she sees dark spots. She has seen flashes of light. Her father always had trouble with his stomach. Her mother always had sick headaches. She is now eighty-two years old, and does not have them as formerly, although her head feels badly at times. This patient has four brothers and five sisters, and each one of them has sick headaches. One of these sisters has five daughters and one of them also has sick headaches.

Malnutrition, general deterioration of the health, and anæmia are powerful predisposing factors in the development of a tendency to these headaches. Mental anxiety, excitement, loss of sleep, and fatigue from overwork are perhaps the most common exciting causes. Disorders of digestion, especially when associated with constipation, sometimes precipitate attacks. In women, disorders of the sexual organs often act as an exciting cause. Frequently they occur in connection with menstruation. Overuse of the eyes, especially if there are errors of refraction, frequently brings on individual attacks. Both children and adults are liable to suffer from the disorder, although in females the attacks frequently begin to be troublesome at puberty, and often become less frequent and less severe after the menopause. Women seem to be affected rather more frequently than men.

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* Address of the President at the semiannual meeting of the New Haven County Medical Association, Waterbury, Conn., October 15, 1896.

The *pathology* of these disorders has been the subject of much speculation and investigation, and a satisfactory explanation is yet to be found.

For many years the vasomotor theory was commonly accepted. According to this theory the pain in the head is frequently due to a spasmodic contraction of the small vessels on the affected side of the head. This view derived apparent confirmation from the paleness and coolness of the skin, and the dilatation of the pupil on the affected side. But this theory did not explain all cases, and so it was assumed that in certain other cases there was a paralytic dilatation of the vessels, and this seemed to be confirmed by the flushing and heat of the skin and contraction of the pupil. The former cases were distinguished as angeiospastic, and the latter as angeioparalytic. These theories were strongly urged by Eulenburg and Du Bois-Reymond, and were adopted and popularized in this country by William A. Hammond. Most neurologists now consider that they afford an inadequate explanation of the phenomena present.

Many have regarded it as a neuralgic affection. Anstie arrived at this conclusion after careful study, and, twenty-five years ago, advocated this view very strongly in his book on neuralgia. In some respects migraine certainly resembles neuralgia, especially neuralgia affecting the supraorbital nerve.

Another theory, advocated by Haig, of England, is that these headaches are due to an accumulation of an excess of uric acid in the blood. He was led to adopt this theory because in his own case he found, by repeated examinations of the urine, that these headaches were accompanied by a diminished excretion of uric acid and urates, and followed by an increased secretion. By prolonged study of the effect exerted upon the amount of uric acid and urates in the urine, by various food and drugs, as well as by exercise, he concluded that the headaches were directly dependent upon the presence in the blood of an excess of uric acid, and by reducing the amount of nitrogenous food ingested he reduced the amount of uric acid in his blood and at the same time the frequency and severity of his headaches.

Perhaps the most popular theory at the present time is that most of these headaches originate from defects in the eye. This theory is especially popular among eye specialists, and is carried to various extremes by different men. It has long been recognized that many persons who had defective vision suffered from headaches if they used their eyes very closely, unless the defects were remedied by glasses. But to argue from this that most cases of migraine are due to defects in the eye is indeed illogical. And yet this is what many specialists do, confusing migraine with other forms of headache. For instance, Dr. Peter A. Callan, of New York, writing in 1891, says: "From an extended experience of years, with hundreds of cases, I am forced by experience to regard eye strain as the cause in over seventy-five per cent. of all cases of functional headache and migraine." Such a statement, of course, does not throw much light on the subject of migraine alone, for Dr. Callan evidently does not distinguish very closely between migraine and other headaches. Evidently ophthalmology is not an exact science in the treatment of errors of refraction, for we often see patients go from one specialist to another, getting different glasses from each, and cured by none. We also read almost opposite opinions expressed by men whose views seem entitled to equal respect. In many of the cases where some defect is found in the eye, it is evident that this is not the entire cause of the trouble, because correction of the defect by glasses does not prevent the recurrence of the pain in the head.

CASE II. *Chronic Paroxysmal Headache, becoming Habitual after the Age of Thirty, in a Patient with an Extreme Degree of Myopia.*—Miss A., about forty-four years; no occupation. October 6, 1896. Had two sick headaches when she was ten or twelve years old, but had no more until after she was thirty. Since, she has had them frequently. The pain comes on at about nine o'clock in the morning, and sometimes, but not often, lasts into the second day. The pain in the head is preceded by a cloudiness before the eyes and by zigzag lines. Sometimes these phenomena are not followed by a headache. The pain is accompanied by slight nausea, but not by vomiting. The pain is usually about the left eye, but sometimes it is around the right eye. She has an extreme degree of myopia, and has been treated by several distinguished oculists, but still has the headaches very often.

It is rather necessary to make a few remarks upon *diagnosis* in order to make more clear exactly the class of headaches which it is intended to include in the present description, and to distinguish them from certain other forms of headache which are believed to be distinct from migraine.

One form of pain in the head which seems easily distinguishable from migrain is neuralgia affecting a particular nerve on one or the other side of the head, of which supraorbital neuralgia may be taken as an example. Neuralgia is characterized in typical cases by the pain being chiefly localized in the vicinity of the distribution of the nerve, by recurrence of the pain at nearly the same hour on successive days, and by the occurrence of remissions in the severity of the pain after it has lasted several hours. The pain of migraine, on the other hand, may last longer, even to two or three days, at each attack, but an interval of several days or weeks usually elapses before another attack occurs, even if no treatment is employed during the interval. On the other hand, it must be remembered that a patient may have attacks of genuine migraine at long intervals, and at other times may have genuine attacks of supraorbital neuralgia occurring on successive days.

But, as Dr. J. J. Putnam has recently pointed out, there are cases of supraorbital neuralgia the symptoms of which are not typical, and which resemble in many respects attacks of migraine, and may even appear to replace attacks of migraine in certain individuals. It should, however, be remembered that the same individual may suffer at different times from more than one kind of headache. One who suffers from occasional attacks of migraine may also have at other times attacks of headache from some reflex source, such as the respiratory organs, the digestive organs, the sexual organs, or the eyes, or from a neuralgia of one of the cranial nerves.

Many forms of headache are easily distinguished from migraine because of their constancy, their occurrence on both sides of the head at the same time with equal severity; their limitation to a particular part of the head, as the frontal, vertical, or occipital regions; and by their obvious dependence upon some easily discernible and sufficient cause.

There still, however, remains a large number of headaches, the exact nature of which can not be determined offhand, but which must be made the subject of prolonged continuous observation and careful consideration.

The *treatment* must be considered with reference first to the relief of the paroxysms, second to their prevention.

When the victim begins to feel the first premonitory symptoms of an attack, he (or she) should at once lie in bed in a partially darkened room, removed as far as possible from any noise, and supplied abundantly with cool, fresh air. The body should be warmly covered, and bottles of hot water or hot bricks should be placed at the feet. In some cases hot applications, in others cold applications, to the head will afford some relief.

Sometimes the administration of alcoholic stimulants at the very beginning of the attack will serve to alleviate it. In some cases a small dose of morphine will cut it short. But synthetical chemistry has in comparatively recent years given us a class of new remedies which far surpass in utility anything previously employed. The most effective of these is antipyrine, given in five- or ten-grain doses every hour. To persons who observe the hygienic directions already mentioned, it will rarely fail to afford relief. In some persons it causes, it is true, an alarming depression of the heart. This, however, rarely occurs in persons in ordinary health who remain in bed, and may usually be counteracted by the administration of ammonia or alcoholic stimulants. Phenacetine in five-grain doses repeated every hour is usually regarded as a safer remedy, but is not quite so efficient. Acetanilide is probably much more frequently used, usually under some different name, and usually with fairly satisfactory result. The habitual use of drugs of this class is, however, fraught with danger, not only from their depressing action on the vital functions, but also because the prompt relief which they afford in many cases leads the patient to neglect to observe those laws of hygiene which promote good health.

In order to prevent the paroxysms of migraine it is necessary to secure the normal action of every function of the body, and to prevent excessive or unnatural action of any organ.

The digestive organs must be closely watched. One or two movements of the bowels must be secured every day. Dyspepsia and indigestion must be avoided. The liver must not be overtaxed by the ingestion of an excess of nitrogenous food. Defective teeth must be treated.

The mucous membranes must be kept in a healthy condition, and especially catarrhal and hypertrophic conditions of the nose, pharynx, and sinuses must receive careful attention.

The generative organs must be carefully looked after, and excessive use or abuse of them must be interdicted. Any pathological condition discovered must be relieved.

The special senses must be carefully investigated, and especially the eye. Errors of refraction and accommodation, as well as muscular insufficiency, should be ascertained if they exist, and in most cases they should be remedied by appropriate measures. But it will be found that many cases of genuine migraine do not receive that striking benefit from glasses which is frequently observed in those cases of headache which, from following immediately and constantly upon prolonged use of the eyes, are more obviously due to eye strain.

CASE III. *Chronic Paroxysmal Headache, partially and temporarily relieved by Glasses.*—Miss B., aged seventeen years; dressmaker's apprentice. March 5, 1896. Has been subject to headaches since she was a small child. Her mother was subject to headaches occasionally. Her father never has them. She has a brother who has them much as she does, and a sister who also has headaches frequently, and who also has nasopharyngeal catarrh with some nasal obstruction. This patient has headaches frequently, sometimes every day, and sometimes every week or every two weeks. Rarely is she free from headaches for as long as two weeks. She usually wakes with a headache, but sometimes she is awakened by the pain in her head before her usual hour of waking. She is usually obliged to remain in bed all day, and the headache stops late in the evening as she goes to sleep. She is usually half sick for two days after the headache leaves her. The pain is nearly always worse about the left eye. She rarely has it about the right eye. The attack commences with an aching in the eye. There are no visual symptoms. She is nauseated when the headache comes on, and vomits two or three hours afterward, but this is not accompanied or followed by any diminution in the severity of the pain. In June, 1895, she was fitted with glasses by a reputable oculist, and their use was attended with some benefit. In March, 1896, after following a tonic plan of treatment for three weeks, reducing her tea from eight or ten to three cups a day, and wearing her glasses constantly, she reported that her head was much improved. Nevertheless, after a month or two she went to another reputable oculist, and was fitted with two pairs of glasses. Two months later (July, 1896) I learned from her sister that she was having headaches less frequently, but that they were as severe as they had ever been. During the present month she reports that, although the glasses helped her at first, during the last seven or eight weeks the headaches have become more troublesome again, and that for a week she has had one every day.

The brain should not be overtaxed by excessive use, and it should be allowed to recuperate after even moderate use by adequate rest. Excitement and worry should be avoided. Exercise out of doors, and abundance of fresh air when in doors, should never be neglected. Sleep should be secured regularly in sufficient amount to allow complete recuperation from physical fatigue. In anæmic persons the blood should be improved by good food, fresh air, and appropriate medication.

Certain remedies, which may perhaps be fairly called specific remedies, are often used in migraine with apparent benefit. The bromides administered daily are sometimes of use, especially in individuals who are of a distinctly neurotic temperament. Cannabis indica, recommended by Seguin and many others, is of unmistakable value in many cases, when given continuously for long periods. The salicylate of sodium is of considerable value in patients of lithæmic tendency. Quinine is frequently of great benefit, especially in patients who have been subject to the influence of malarial poison, and when the headaches occur periodically with short intervals.

After considering all the measures of treatment which are alleged to be useful, one naturally asks as to the *prognosis*. In the present state of medical practice this, unfortunately, is not very satisfactory. The majority of patients do not care to undertake a systematic course of treatment. If by the use of a few tablets or powders they can gain relief of the present pain of a severe paroxysm, they will not take the trouble to follow up treatment in the interval when they are feeling well. Fortunately, when the attacks become frequent and severe, it is not generally difficult, by careful study of the case, to suggest changes in the habits of life, and to prescribe remedies which will greatly diminish the frequency and severity of the paroxysms.

209 Church Street.

A Change of Name.—Dr. H. Davison Schwarzschild announces that he has assumed the name of H. Davison Saril, by virtue of an order of the Supreme Court.

Therapeutical Notes.

Creosote in Small Doses in Gastric Affections.—Dr. Zaugger, of Zurich (*Semaine médicale; Revue mensuelle des maladies de l'enfance*, September, 1897), thinks that creosote, although rarely employed in diseases of the digestive tract, save to check vomiting, is often serviceable in infantile gastro enteritis and various dyspeptic conditions. He gives the following formula:

℞ Beech creosote	3 drops;
Dissolve in:	
Alcohol	15 grains;
Add:	
Mucilage	1,500 "

M. S.: For children, a teaspoonful (for adults, a tablespoonful) immediately before each meal.

Iodine and Guaiacol in the Treatment of Localized Tuberculosis.—Lore (*Bulletin de médecine de Paris*, July 28, 1897; *Lyon médical*, August 22, 1897) recommends subcutaneous injections of iodine and guaiacol, not for their local effect, but for their general action on the organism. The amounts given daily should be from 0.077 to 0.15 of a grain of iodine and a grain and a half of guaiacol to begin with, to be increased gradually to 0.6 of a grain of iodine and from three to six grains of guaiacol.

Calomel in the Treatment of Snake Bites, and Corrosive Sublimate for their Prevention.—Dr. Corislano d'Utra, of Brazil (*Bulletin de thérapeutique; Progrès médical*, August 28th), says that persons suffering with snake bites may be cured in all cases by taking three doses, two hours apart, of thirty grains of calomel in an ounce of lemon juice. He further declares that whoever will carry about his person a bag containing from seventy-five to three hundred grains of corrosive sublimate need have no fear of serpents. They will flee from him, and, if by chance he is bitten, the bite will be harmless!

Franklinization in the Treatment of Impetigo.—Doumer (*Bulletin de la Société d'électrothérapie*, May, 1897; *Nord médical*, September 1, 1897) reports five cases of impetigo cured by franklinization. Often after the first sitting, he says, and almost always after the second, the erythema begins to disappear; then in a short time the crusts become dry and fall off, leaving the surface of a light-rose color, which soon gives place to the normal hue.

Silver Nitrate and Ergotine in the Treatment of Pulmonary Tuberculosis.—Before the Section in Medicine of the Twelfth International Medical Congress, Dr. Crocq, of Brussels (*Progrès médical*, September 4th), maintained that tuberculous disease tended to end in recovery rather than in death, and that a fatal termination was due to an inflammation which led to a propagation of the tubercles. If this inflammation could be prevented or cured, there would be more cases of recovery. According to the author, we have no remedy against the bacillus; creosote does not kill it, and there are some inconveniences about its employment, especially as regards the management of the stomach. He has employed with much success, even in cases that were grave or complicated with diabetes, ergotine and silver nitrate. The latter, he says, acts very beneficially on the stomach.

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THE PREVENTION AND TREATMENT OF RÖNTGEN-RAY BURNS.

DR. GEORGES APOSTOLI, of Paris, has been good enough to send us a proof of one of the communications made by him at the Twelfth International Medical Congress. It deals with a case of extensive burning of the abdominal wall extending to the subcutaneous tissue and resulting in an eschar measuring about seven by more than five inches. The lesion had appeared after two applications of the Röntgen rays made in Dublin on the 22d and 28th of May, 1896, and the measurements mentioned were taken in the following February. For eight months, the use of various lotions and caustics, the practice of epidermis-grafting, and curetting proved absolutely of no use. Then electrical treatment was begun, at the end of October, 1896, and in August of the present year the eschar had been reduced to considerably less than a square inch and the granulating surface was cicatrizing.

From his study of this case and others, Dr. Apostoli concludes that the application of the Röntgen rays may provoke under certain circumstances a dermatitis with a more or less grave neuritis characterized by simple erythema or by sphacelus, which may extend to the subcutaneous tissue. This dermatitis, variable according to whether it affects the skin, the nails, or the hair, varying also to a certain extent according to the constitutional state of the subject of the experiment, is comparable in many respects, he says, to an ordinary electrical burn, presenting the same general features of asepsis, absence of fever, a very slow progress toward repair, and—and this point Dr. Apostoli emphasizes—an intensity almost the same throughout the whole extent of the burn. He thinks that the injury is always the result of some error in the application, by placing the Crookes's tube too near the skin, by protracting a single sitting too long, or by making the applications too numerous or without sufficient intervals between them. According to the experiments of Destot, Balthazard, and de Tarchanoff, he says, these accidents should not be imputed to the Röntgen rays themselves, for they are harmless, but to the electrical effluvia generated by the Crookes's tube; whence the necessity, in addition, of suppressing these effluvia by means of a mercurial *trembleur* or of intercepting them with a sheet of aluminum, which allows the harmless Röntgen rays to pass, but arrests the only ones that are dangerous, the electrical rays.

For the treatment of rebellious cases of this dermatitis, Dr. Apostoli proposes electrical applications, which, he says, should include the following elements, the intensity and duration being varied according to the clinical indications: 1. Simple static "effluvation," which by its direct local action, aided by its general influence, hastens the process of repair and cicatrization of the ulcers. 2. The polar application of a galvanic current or, better, an undulatory current, to accelerate the detachment of the eschar and thus to favor the topical and the ulterior trophic action of the static effluvia. 3. The general action of a current of high frequency, by the *lit condensateur,* to raise, as Professor d'Arsonval has shown that it can do, the coefficient of the general nutrition and give strength and vitality to the system.

KAOLINOSIS, OR POTTERS' PNEUMONOCONIOSIS.

CASES of that form of pneumonoconiosis in which the infiltrating dust consists of kaolin, a native aluminum silicate, have been recorded by Déperet-Muret, Duchesne, Raymond and Lemaître, Boulland, and Paté as occurring in workers in porcelain and faience. This fact is recalled by Professor Hlava, of the Bohemian University of Prague, in the *Wiener klinische Rundschau* for September 12th. Lemaître, Boulland, and Paté, according to Hlava, believe that this form of pneumonoconiosis may lead to a peculiar, non-bacillary form of tuberculosis, and that, on the other hand, it may prove curative in incipient cases of bacillary tuberculosis. The author adds that this form of disease is observed also among workers in ultramarine, who use a mixture of kaolin and sodium sulphate, but is not common among potters, at least to such an extent as in a case reported by himself in the article referred to.

The patient was a man, forty-six years old, who had been employed in a pottery, as a turner and molder, from the twelfth year of his age until he was thirty-two. He died in a lunatic asylum, of which he had been an inmate but a short time. The left lung was found enlarged and weighing nearly five pounds and a half. The pleural surface was smooth and showed greenish-gray pigmentation. On the cut surface, throughout, there were numerous nodules and greenish-gray cords of connective tissue, some of which were of a decided gray color at the centre. The tissue thus changed shaded off gradually into the surrounding healthy tissue, being surrounded by grayish-brown nodules of hepatization. In the lower lobe there were signs of recent bronchopneumonia. The lung was emphysematous and for the most part œdematous. The bronchial tubes were somewhat dilated and filled with stringy mucus. The right lung weighed nearly six pounds, and showed similar changes; in particular, there were indurated nodules of a greenish-gray color. The bronchial glands were hard, and their cut surface was dotted with green. The connective tissue surrounding the glands was indurated and bound the glands most intimately to the bronchial wall and, at the hilum of the lung, to the pleura. On the left side the bronchial glands were not so hard. On chemical examination, the presence of aluminum silicate was shown in the lungs; almost half the ash left after a portion of the right lung was burned consisted of that substance. On microscopical examination, three pigments were found. They were coal dust in small quantity, particles of iron oxide, and, most abundant, coarse particles of a crystalline structure.

Potters' clay, the author remarks, is always moistened, but the products dry very quickly on the surface, especially when, as is generally the case, they are taken directly to a drying room and then come back to the workman's hands. It is self-evident, he adds, that the air of the place must be full of dust, and that the workman, bent over his work, has to inhale a good deal of it. The kaolin dust sets up a chronic inflammation which ultimately leads to the formation of numerous sclerotic nodules and to emphysema. Among the names that the author applies to this affection is that of silico-aluminosis, which seems to us unworthy of adoption. His paper was read before the Twelfth International Medical Congress, in Moscow.

MINOR PARAGRAPHS.

ETHER IN THE TREATMENT OF URÆMIA.

After all that has been said of the danger of employing ether as an anæsthetic in cases in which there is some kidney trouble, it is interesting to note what M. Lemoine and M. Gallois give as their experience in the use of ether as a remedy in uræmia (*Nord médical*, September 1st). One of those gentlemen has employed it for nearly ten years, and has succeeded in stopping the most serious respiratory trouble due to uræmia. They say that the ether treatment is quite likely to prove efficacious in uræmia due to acute nephritis, to acute renal congestion, to such congestion supervening in the course of sclerotic nephritis, or to infectious nephritis; the uræmia connected with the slow disorganization of the kidney, by arterio-sclerosis, however, will not yield to ether. Every half-hour or every hour, according to the case, they give two or three teaspoonfuls of ether in a little sweetened water, but they think it best to replace the mouth dose occasionally, say every three hours, by a subcutaneous injection of two or three cubic centimetres of ether. The drug causes an abundant flow of urine, especially in favorable cases, strengthens the pulse, and calms the respiratory spasm. The authors regard the ether treatment as on a par with that by bloodletting.

EPARSALGIA.

Sterling (cited in the *Deutsche Medizinal-Zeitung* for August 9th) includes under this name a long array of troubles attributed to overstraining of a part, such as acute idiopathic dilatation of the heart, acute aortic insufficiency, hæmorrhages into mucous membranes with subsequent ulceration, hæmoptysis, acute pulmonary emphysema, hernia, prolapse of the rectum, intestinal rupture, and enteroptosis.

SPASM OF THE PLATYSMA MYOIDES IN ORGANIC HEMIPLEGIA.

M. Babinski lately showed to the Paris Société médicale des hôpitaux (*Journal des praticiens*, August 7th) a patient with organic hemiplegia who, whenever he opened his mouth, had spasmodic contraction of the platysma myoides of the sound side. He said that this was not exceptional; he had observed it in many cases, more or less pronounced according to the case.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 28, 1897:

DISEASES.	Week ending Sept. 21.		Week ending Sept. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	30	8	40	5
Scarlet fever	66	2	69	3
Cerebro-spinal meningitis	1	0	0	0
Measles	30	3	21	0
Diphtheria	119	20	131	25
Croup	2	1	1	2
Tuberculosis	246	73	185	107

The Buffalo Academy of Medicine.—The special order for the last meeting of the Medical Section, on Tuesday evening, September 28th, was a paper on Tuberculosis, by Dr. William H. Bergtold, of Denver, the discussion of which was to be opened by Dr. F. J. Thornbury and Dr. S. S. Green.

New York University.—Professor Adami, of McGill University, Montreal, has accepted an invitation to deliver a course of lectures on general pathology. The course will begin on Friday morning, October 8th.

St. Mark's Hospital.—The graduates have formed an alumni association with the following officers: Dr. Leon F. Garrigues, president; Dr. Martin J. Schuh, secretary; and Dr. Casper Stock, treasurer. The association will hold monthly meetings at the hospital.

Changes of Address.—Dr. William S. Gottheil, to No. 144 West Forty-eighth Street, New York; Dr. S. A. Knopf, to No. 955 Madison Avenue, New York; Dr. Henry Ling

Taylor, to No. 71 West Fifty-fifth Street, New York; Dr. J. Kay Wrigley, to No. 1312 Ninth Street, Altoona, Pa.

Marine-Hospital Service Health Reports.—The following statistics concerning cholera and yellow fever were received in the office of the Marine-Hospital Service during the week ending September 25, 1897:

Cholera.

Osaka and Hiogo, Japan	Aug. 14–21		2 deaths.

Yellow Fever—United States.

Mobile, Ala	Sept. 18	11 cases.	
“ “	Sept. 19	2 “	
“ “	Sept. 20	1 case.	
“ “	Sept. 21	2 cases.	
“ “	Sept. 22	4 “	
“ “	Sept. 23	2 “	
“ “	Sept. 24	3 “	3 deaths.
Atlanta, Ga	Sept. 23	1 case.	
Cairo, Ill	Sept 19	2 cases.	
“ “	Sept. 20	2 “	
Louisville, Ky	Sept. 23	1 case,	1 death
New Orleans, La	Sept. 18	5 cases,	1 “
“ “	Sept. 19	6 “	2 deaths.
“ “	Sept. 20	18 “	
“ “	Sept. 21	9 “	
“ “	Sept. 22	12 “	2 “
“ “	Sept. 23	9 “	3 “
“ “	Sept. 24	10 “	4 “
Barkley, Miss	Sept. 18	1 case.	
Biloxi, Miss	Sept. 19		1 death.
“ “	Sept. 20	1 “	1 “
“ “	Sept. 21		1 “
“ “	Sept. 22	5 cases,	1 “
“ “	Sept. 23		
“ “	Sept. 24		
Edwards, Miss	Sept. 19	4 “	
“ “	Sept. 20	2 “	
“ “	Sept. 21	12 “	
“ “	Sept. 22	13 “	2 deaths.
“ “	Sept. 23	23 “	
“ “	Sept. 24	29 “	
Ocean Springs, Miss	Sept. 18	2 “	3 “
“ “	Sept. 22	4 “	
“ “	Sept. 23	6 “	
“ “	Sept. 24	1 case.	
Scranton, Miss	Sept. 19	1 “	
“ “	Sept. 20	15 cases.	
“ “	Sept. 22	4 “	
“ “	Sept. 23	6 “	
Beaumont, Texas	Sept. 22	1 case.	

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 19 to September 25, 1897:*

Richard, Charles, and McCreery, George, Captains and Assistant Surgeons. Ordered to report, October 4, 1897, to the president of the examining board, appointed to meet at the surgeon general's office, Washington, D. C., for examination for promotion.

Greenleaf, Charles R., Colonel and Assistant Surgeon General, will, in addition to his present duties in charge of the Medical Supply Depot in San Francisco, Cal., take charge of the office of the Chief Surgeon, Department of California, during the absence on leave of the chief surgeon.

Middleton, Johnson V. D., Lieutenant Colonel and Deputy Surgeon General, Chief Surgeon, Department of California. The leave of absence granted him is extended one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending September 25, 1897:*

Riggs, C. E., Assistant Surgeon. Detached from the New York Navy Yard, October 4th, and ordered to the Newport, October 4th.

Leys, J. F., Passed Assistant Surgeon. Detached from the Helena, September 20th, and ordered to the Vesuvius.

Drake, N. H., Surgeon. Ordered to the Minneapolis, Columbia, and other vessels in reserve at League Island, Pa.

Gates, M. F., Passed Assistant Surgeon. Detached from the Minneapolis, on relief, and ordered to the Boston Hospital.

Lumsden, G. P., Surgeon. Detached from Port Royal, on relief, and ordered to special duty attending officers at Norfolk, Va.

Lung, G. A., Passed Assistant Surgeon. Detached from the Boston Hospital, on relief, and ordered to naval station, Port Royal, S. C.

Guest, M. S., Passed Assistant Surgeon. Detached from the Vesuvius and ordered to the Helena, September 20th.

Rogers, F., Surgeon. When detached from Boston Navy Yard, ordered home and to be ready for sea.

Ames, H. E., Surgeon. Ordered to the navy yard, Norfolk, Va., October 2d.

Elliott, M. S, Assistant Surgeon. Detached from the Indiana and ordered to the Porter.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending September 18, 1897.*

Sawtelle, H. W., Surgeon. To proceed to Atlanta, Ga., for special duty. September 15, 1897.

Carter, H. R., Surgeon. To proceed to New Orleans, La., for special duty. September 14, 1897.

Banks, C. E, Surgeon. To proceed to Baltimore, Md., for special duty. September 13, 1897.

Glennan, A. H., Passed Assistant Surgeon. To proceed to Mobile, Ala., for special duty. September 15, 1897.

McIntosh, W. P., Passed Assistant Surgeon. To represent service at meeting of Mississippi Medical Society at Louisville, Ky., in October. September 17, 1897. To proceed to Memphis, Tenn., and assume temporary command of service. September 18, 1897.

Guiteras, G. M., Passed Assistant Surgeon. To report to Surgeon H. R. Carter for special duty. September 17, 1897.

Geddings, H. D., Passed Assistant Surgeon. To proceed to Jackson, Miss., for special duty.

Russell, H. C., Assistant Surgeon. Granted seven days' leave of absence from October 15, 1897. September 16, 1897.

Society Meetings for the Coming Week:

Monday, *October 4th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society; Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Monmouth, N. J., County Medical Society (Freehold).

Tuesday, *October 5th:* Mississippi Valley Medical Association (first day—Louisville, Ky.); New York Neurological Society; New York Obstetrical Society (private); Buffalo, N. Y., Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (annual), Columbia (semiannual—Chatham), Orange (semiannual—Goshen), and Washington (semiannual), N. Y.; Hudson, N. J. (Jersey City), and Union, N. J. (quarterly), County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *October 6th:* Mississippi Valley Medical Association (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me, County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, *October 7th:* Mississippi Valley Medical Association (third day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Washington, Vt., County Medical Society.

FRIDAY, *October 8th:* Mississippi Valley Medical Association (fourth day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private), New York; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y. (anniversary).

SATURDAY, *October 9th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Births, Marriages, and Deaths.

Born.

EAST.—In Rochester, N. Y., on Monday, August 23d, to Dr. and Mrs. Frederick East, a daughter.

Married.

PORCHER—PORCHER.—In Minneapolis, on Wednesday, September 29th, Dr. Walter Peyre Porcher and Miss Mary Long Porcher.

Died.

BROWN.—In Alexandria, Virginia, on Monday, September 13th, Dr. Bedford Brown, aged seventy-two years.

JONES.—In Nashville, Tennessee, on Saturday, September 25th, Dr. William P. Jones, aged seventy-eight years.

SOTHORAN.—In Washington, D. C., on Monday, September 27th, Dr. James T. Sothoran, aged fifty-five years.

Letters to the Editor.

THE OPHTHALMOLOGICAL ASPECT OF DIABETES.

905 PULLMAN BUILDING, CHICAGO, *September 15, 1897.*

To the Editor of the New York Medical Journal:

SIR: Two histories of cases were read by Dr. Risley before the American Ophthalmological Society, at Washington, D. C., May 5, 1897. Not only are these cases exceedingly interesting, but they have features which to me appear to be of great importance and more than ordinary value in pointing out the ætiology of diabetes mellitus and its allied conditions. The cases, briefly stated, are as follows:

CASE I.—A patient forty-nine years of age, subject to glycosuria, the specific gravity of the urine at times rising to 1.050. Under treatment with nitrate of uranium, the sugar entirely disappeared, also the thirst, and there was a general improvement in the health. With this improvement of physical conditions the vision rapidly grew worse, so that it required an increase of about four dioptres to bring about normal vision. Later, the glycosuria again reappeared, and with its reappearance the refraction of the eye was again increased so that it was necessary to reduce the glasses about 4 D. This last correction seemed to remain unchanged, but the patient's health from this time failed rapidly under the persistent glycosuria.

CASE II.—This patient had suffered six years from saccharine diabetes. The specific gravity of the urine rarely rose above 1.030. On April 23d the patient complained of dim vision for distant objects and inability to read even large type with his reading glasses. He expressed surprise over his failing vision in view of the fact that he was much better in all other respects. Dr. Wilson reported that the specific gravity fell from an average of 1.026 to 1.012 and on one occasion it was as low as 1.006, with no sugar or but a trace present. With the improvement of health, the refraction of the eyes was decreased. On May 20th the patient reported his vision blurred and was obliged to return to his old glasses, that were about one dioptre weaker. With this increase of refraction, the specific gravity of the urine again returned to 1.027 and it contained 4.20 per cent. of sugar.

In my brief statement of Dr. Risley's cases I have paid no attention to the astigmatism; I have simply called attention to the changes of a hyperopic character, which entirely suffice for my conclusions.

Dr. Risley comments as follows: "The probable cause for the rapid change in the refraction of the dioptric system of the eye in these two cases furnishes a most interesting inquiry, any answer to which, however, must be purely hypothetical. It is highly probable that the unstable equilibrium of the transparent component cells of the crystalline lens would be readily disturbed by qualitative change in its environing fluids, especially any change from the normal relative density or specific gravity of the tissue of the lens and the nutritive fluids in which it is bathed. It is well known, for example, that the entrance into the tissues of the frog of rapidly diffusible substances, as chloride of sodium, naphthalin, and sugar, impairs the transparency of the lens, presumably because of some such changes as suggested above in the osmotic qualities of the fluids in and around the lens. These considerations render it at least probable that in the cases here recorded the change in the density of the tissue fluids suggested by the varying amount of sugar secreted with the urine was sufficient to disturb the physiological relation of osmosis in the lens, and by this means to cause the observed changes in the refraction of the eye."

Thus it would seem that Dr. Risley endeavors to account for the changes of refraction in the above-stated cases on the theory that the indices of refraction of the various eye media were changed at various times by the absence or presence of sugar or other elements. What appears to me to militate strongly against such a theory is this; in these cases the refraction was at its lowest point when the sugar was absent, and at its highest when the sugar was present. During the entire period of low refraction the sugar remained absent and the health very much improved. Particularly note that, during the entire period that the refraction was depressed or low, the sugar remained absent and the health improved. But when the refraction assumed a higher or its old condition, the disease again returned. Had the lower state of refraction depended upon the presence of sugar, the refraction would have been low when the gravity was high, and the gravity would have been low when the refraction was high, but the converse is the case.

I will offer the following as a possible explanation of the refractive and accompanying physiological changes in Dr. Risley's cases:

The low refractive state was induced by a cessation of ciliary impulse or innervation. With this cessation or depression of ciliary impulse there was a correlative change or depression of nerve action in those centres that presided over the function of the kidneys. This depression was sufficient to relieve the irritated condition of those centres and suspend the glycosuria and its accompanying evil conditions. In my opinion, it is probable that, if the refractive condition could have been held at its lowest point, the glycosuria would not have returned. For some years, in cases of diabetes mellitus and insipidus, I have followed the practice of endeavoring to break down the ciliary impulse and lower the natural refractive condition of the eye, and whenever I have succeeded in doing so I have usually found an adequate diminution and in some cases an entire disappearance of the sugar, the thirst, and the polyuria. I have accomplished this by having the patient wear spherical glasses much stronger than the manifestations indicated, not allowing for distant vision, usually more than twenty eightieths of vision, and sometimes less, and for reading, if possible, adding to the distant glasses about 3 D. more of sphere. Heterophoria must be considered, and even if orthophoria exists in the extrinsic muscles, this ciliary repression can not be accomplished to any great extent by the use of spherical glasses alone, for the following reason: The relation existing between the interni, the externi, and the ciliaries has been established through the lifetime of the patient, and when a plus sphere is added to such an eye for the first time this relation is disturbed, and in proportion to the amount of plus sphere added there is established a correlative exophoria, which must always be accommodated for by prisms or operative measures, else there is a constant stimulus while maintaining parallelism of the optic axes to also maintain the old correlative innervation of the ciliary that sustains the high refraction. But, if to the plus glasses, tending to repress the ciliary impulse, is added a sufficient amount of prism to sustain the primary relation, there is a greater likelihood of success. In these cases of Dr. Risley's there was a suspension of ciliary impulse, and, assuming the orthophoria primarily existed, under the suspension of nerve impulse the old relation between the interni, the externi, and the ciliaries was disturbed and an exophoria in correlation was established during the period of low refraction. During this time fusion stimulus kept the optic axes parallel, sustaining a constant tendency to bring back the ciliary impulse and higher refraction, or the old correlation.

I trust that I have gone sufficiently far to make myself understood. Chalmer Prentice, M. D.

ITALIAN HOTELS AND AMERICAN OPERATING ROOMS

New York, *September 20, 1897.*

To the Editor of the New York Medical Journal:

Sir: I am extremely sorry to learn from Dr. Knopf's communication in your issue for September 11th that my remark about the tiled floor of the hotel in Naples has been construed as if I wished to speak derogatorily about the floors in our own operating rooms. This was by no means my intention. I am sure the New York operating rooms are as good as any, or perhaps the finest in the world, but I wished to suggest that a floor with glazed tiles might be better than the stone floor, better on account of the polished surface.

Allow me to correct a printer's error which I noticed in my letter to you as published in your issue for August 28th. It reads: "Mr. Alexander is one of the best, if not the very best of all ministers any country ever has sent to Greece." Here should follow the quotation mark, and not after the words "calumnies against Greece."

Allow me also to add one more objection to the word policlinic. Supposing the word polis (πόλις, πόλεως) could be employed, we should have to say poleoclinic. A. Rose, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of May 5, 1897.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

(*Continued from page 366.*)

Several Cases of Appendicitis.—Dr. A. Brothers reported several cases of appendicitis illustrating certain points in the treatment. (See page 456.)

Fracture of Both Patellæ; Wiring.—Dr. T. A Smith presented the history of a patient, forty-five years of age, who had been admitted to Bellevue Hospital, in the service of Dr. Phelps, on March 1, 1897, with the following history: He had slipped on the ice and, in falling, had felt his right patella snap. He had managed to get to the nearest elevated railroad station and into a train. As he was taking his seat he had felt his left patella snap, and had fallen to the floor. He had been unable to rise, and had been brought to the hospital at once. Examination had shown both knees slightly swollen, and but little ecchymosis about the joints. There was a transverse fracture of both patellæ, with half an inch separation of the fragments. The knees were bandaged tightly and posterior splints applied. On March 12th, Dr. Phelps being present, both patellæ had been operated upon. In each case the torn capsule had been so infolded over the fragments that proper apposition of bony surfaces would have been impossible without an operation. The fragments had accordingly been brought together by means of silver wire, size No. 4, and the wounds closed. Drainage-tubes had been left in the joints for thirty-six hours. At the end of three weeks lateral movement of the patellæ had been commenced. On the twenty-ninth day the patient had sat up in a chair, and the next two days he had walked about the ward with crutches. On April 13th, thirty-two days after the operation, he had walked about the ward without crutches or stick. Every day forcible flexion of both joints had been made, and on April 18th he had had ninety degrees of flexion in his right knee, and over seventy degrees of flexion in his left knee. On April 26th, after having walked about the yard, he had come back to the ward complaining of pain in his left knee. Examination had shown this to be red, swollen, and œdematous, with half an inch of separation of the fragments. He had been at once put to bed and an ice-cap applied to the knee. Two days later the fragments had been re-wired, the first wire having broken. As soon as the joint had been opened it had been evident that bony union had taken place after the first operation. The joint cavity had been full of blood-clot, and there had been much oozing from the fractured surfaces of the bone. The capsule had not been torn. Since this operation he had done well, the wound having healed primarily, and at the end of two weeks lateral motion would be commenced. The refracture of the patella had probably been due to forcible flexion, made that morning before the patient went out for a walk. While walking around the wire suture had broken.

Dr. Charles Phelps said that he had never seen just such a refracture. On two or three occasions he had refractured the patella in order to get better motion of the joint. The first time it had occurred accidentally while using a good deal of force, the patient being under an anæsthetic. Since that time, he had, in at least three instances, purposely refractured the patella. The case just reported had demonstrated that in such a refracture there was no danger of the infolding of the ligament, and consequent failure of osseous union.

A Unique Case of Intestinal Fistula.—The President reported such a case. (See page 454.)

Dr. Frederick Holme Wiggin congratulated Dr. Hotchkiss on his success. He said that the method of Maunsell was gaining ground rapidly, and was better adapted to the purpose, in many cases, than any mechanical device. He had in the last few years operated upon a good many cases of ventral hernia following laparotomy, and had generally succeeded in overcoming the difficulty by excising the thin overlying skin, and dissecting and separating the various layers that surround the edge of the opening, so as to restore their anatomical relations before commencing to suture them. These cases had healed without difficulty, and the herniæ had been cured. He was surprised that the president had objected to giving his patient nourishment by the stomach for a number of days after the operation. About two months ago he had presented a specimen from a case in which this same operation had been performed. Four days after the operation he had considered it necessary to open the abdominal cavity, owing to symptoms of intestinal obstruction, and he had found a flexure of the gut below and adhesions from a small abscess of the mesentery. The point of union could not be distinguished by sight from other portions of the gut, so perfectly had the peritonæum been regenerated. He had also some time since presented another specimen from a patient who had died sixty hours after the operation. In that case two Murphy buttons had been used, and one of these being too large had led to the patient's death. From experiments that he had made on dogs he believed that within twelve hours there was very fair union. So firm was this union that he saw no objection to using cathartics after sixty hours. It had been his practice to give hypodermic injections of morphine to patients upon whom he had performed intestinal anastomosis, yet most of these patients had had movements of the bowels, in spite of the opium, within two or three days. In a recent operative case out of town he had specially requested the surgeon in charge not to give a cathartic, but to give opium; however, the record showed that on the second or third day the bowels had been moved by cathartics without bad result.

The President said that his patient had been given food by the mouth within forty-eight hours. As there had been many adhesions in the abdomen, and the intestine had been handled considerably during the operation, he had thought it advisable to be cautious. The treatment of the hernia in this case had seemed rather difficult, because the rectal muscles had been so widely separated that it had been with great difficulty that they had been brought into the field of operation and approximated. A cure had been effected, although the superficial tissues could not be brought together. The woman had been perfectly strong and well on leaving the hospital.

Tuberculous Kidney.—The President presented a specimen of tuberculous kidney removed from a patient who had been admitted to hospital last summer. The family history had been markedly phthisical, and he had himself had pneumonia. Two weeks before admission his urine had suddenly become scanty, without known cause. Examination of the lungs had disclosed a dull tympanitic note over the right apex, with a slight increase in voice and breathing. Over the left apex the whispered voice had been increased. There had been a tympanitic percussion note over the lower half of the axillary space. A harsh, blowing, systolic murmur had been heard in the third left interspace, about an inch from the sternum. Some tenderness and rigidity had been present in the left half of the abdomen, and in the left hypochondriac and left lumbar regions had been a tumor which was tender on pressure. On July 5th, under ether, the usual incision had been made for lumbar nephrectomy; an enormous collection of pus had been evacuated, and a small tuberculous kidney removed. The patient's condition before and during the operation had been exceedingly bad. Accordingly, two or three quarts of salt solution had been injected into the subcutaneous tissue. He had come out of the shock and had made a good recovery, but had developed numerous abscesses at the site of the subcutaneous injections. He now reported himself as perfectly well.

Bunion; its Ætiology, Anatomy, and Operative Treatment.—Dr. Parker Syms read a paper with this title. (See page 448.)

Dr. Walter C. Wood said that he had operated with equal success by the dorsal method and by the incision between the first and second toes, but he thought the dorsal was the easier operation. It was an easy matter to miss the joint by the other method. He had learned to keep as far away as possible from the bursa.

Dr. Gouley spoke of the extreme cases in which the great toe lay across the other toes. It was proper, he said, to caution inexperienced operators against doing too much. It would be a very dangerous thing for the foot if the whole of the head of the metatarsal bone were removed, for this had been shown to be one of the legs of the tripod of the limb. If the whole of the head of the metatarsal bone were removed walking would be rendered very difficult. Accordingly, only the upper and anterior portion should be removed. Enough could be taken away on the anterior or upper portion to render replacement of the phalanx comparatively easy, and an incision not over an inch long was ample for the purpose. The essential point in the operation was to preserve this part of the tripod.

Dr. Louis A. de Zerega asked if Dr. Syms had found it necessary to use the Esmarch bandage in these operations.

Dr. Syms replied that his operations on these cases had been practically bloodless, the only bleeding being from the division of the bone. He was strongly of the opinion that the healing was much better when the Esmarch bandage was not used, and he had had two severe hæmorrhages from the use of this bandage.

Dr. W. J. Chandler, of South Orange, said that he had always used the Esmarch bandage as a matter of convenience, and had never been troubled with hæmorrhage after its use. He had made use of the incision between the great toe and the second one; he had never tried the dorsal incision. In all of his cases there had been primary union, although he had seen one or two cases of extensive suppuration in the practice of others.

The President said that in one case he had been obliged to excise the greater part of the head of the first metatarsal bone. In order to avoid excising more, he had removed the proximal end of the phalanx. This had resulted in shortening the great toe, but had given not only a perfectly movable joint, but a short and straight toe.

Dr. Syms said that he desired to emphasize the importance of selecting the location of the incision. The one in the commissure between the toes, as recommended by Dr. Fowler, was a thoroughly good one, but the one on the dorsum of the toe gave a perfect exposure of the entire joint and all the tissues necessary to reach it. The importance of avoiding making the incision at the inner portion of the toe was obvious—the cicatrix would then come under the direct pressure of the shoe, and a painful condition might exist after the operation. Each case should be individualized, and only as much diseased or deformed tissue removed as was necessary. It was absolutely essential to keep on removing the bone until it could be straightened, and maintained in this position without much force. In many of the severe cases it was undoubtedly necessary to remove the entire head of the metatarsal bone. It was well to avoid the elaborate and complicated procedures described by Dr. Ulmann and Dr. Weir, which consisted in making a complicated incision halfway round the bursa, dissecting out the bursa, making another incision on the outer side of the toe, resecting the toe, separating nearly all the tendons about the toe, and arranging them into new positions, and taking out the sesamoid bone.

Ruptured Kidney.—Dr. Charles Phelps exhibited a case of ruptured kidney. The accident was supposed to have resulted from a kick. On arrival at the hospital the man's urine had been drawn by catheter, without difficulty, and had been found largely mingled with dark, perfectly fluid blood. The case had been thought to be one of rupture of the kidney, but as he had had no constitutional symptoms it had been thought possible that no interference would be demanded. During the night the nurse had noticed, however, some abdominal swelling, and in the morning he had passed water once without assistance. On the evening of the first day his temperature had been normal. The next afternoon both temperature and pulse had risen; the abdomen had been tender and tympanitic, and it had seemed evident that there was some abdominal lesion in addition to the injury to his kidney. After some delay the patient had consented to an operation. A lumbar incision had revealed a large amount of blood in the abdominal cavity. The bladder had not been injured. It had been difficult to discover the source of the hæmorrhage, which had continued to be copious, and before the conclusion of the operation the patient had died. By an extensive incision, made immediately afterward, it had been ascertained that the hæmorrhage had ruptured the parietal peritonæum, and in that way had found direct access to the abdominal cavity. The peritoneal tissues had been filled with blood. The rupture had been in the anterior part of the kidney. The only other abdominal lesion had been a contusion of the cæcum, and one or two slight contusions of the ileum. The coroner had subsequently found that the man had had but one kidney.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Congress, held in Washington, D. C., Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. Charles H. Knight, of New York, in the Chair.

(*Continued from page 301.*)

The Treatment of Chronic Suppurating Frontal Sinusitis by an Opening in the Anterior Wall of the Sinus and Drainage through the Nose.—Dr. J. H. Bryan, of Washington, read a paper on this subject. (See page 451.)

Dr. Swain: I should like to inquire where the incision was made?

Dr. Bryan: It was made in the median line, beginning at the root of the nose and extending from an inch and a half to two inches into the forehead.

Dr. Cohen: What is the condition of the scar at present?

Dr. Bryan: There is a fine line, exaggerating somewhat the natural cleavage of the skin.

Dr. Casselberry: Did you dissect up the skin and periosteum together in one flap?

Dr. Bryan: Yes.

Dr. Mackenzie: Great caution should be exercised in the use of strong antiseptics in the nasal and accessory cavities. Experiments carried out by Halsted, in Baltimore, show that they lower the vitality of wounds, and therefore increase suppuration. Bichloride of mercury, in the strength of 1 to 10,000, produces in fresh wounds a line of superficial necrosis recognized by the microscope. I have long since abandoned the use of strong antiseptic solutions, and have substituted for them simple methods of producing asepsis. The same may be said of drainage-tubes, which are often nothing more than pus-producers and carriers of infection.

Dr. Casselberry: I have noticed in the foreign journals during the past year reports of several cases of success following Luc's new operation for empyema of the frontal sinuses, and we are indebted to Dr. Bryan for what is probably the first report on this particular operation made in this country. He confirms Luc's favorable advices. The success of this external operation and its freedom from objections is the more marked since intranasal operating, in my experience, is unsatisfactory, so far as concerns an absolute cure of the frontal-sinus empyema, and since by the old external operations there was left a scar and often a permanently discharging sinus. The chances of success, therefore, are much better by Luc's method, which offers in the first place a better chance of permanent cure, and, secondly, that without much scar. In cases in which I have operated by the intranasal method, removing the anterior end of the middle turbinated body and all obstructing granulations and polypi, in order to secure better drainage, benefit has accrued; the headaches stopped, the discharge lessened, and the patients are more comfortable, but generally dissatisfied that a perfect cure has not resulted, and yet wearied by treatment to the point of refusing, as a last resort, an external operation. Therefore, I should consider it expedient in future to carry out the plan of Dr.

Bryan, and recommend Luc's external operation at once without losing time by intranasal procedures other than the removal of obstructing polyps, which should be done in any event.

Dr. W. H. Daly, of Pittsburgh: I should like to express a thought which arose while I was listening to this report, and that is, that it is a source of high gratification that this able work has been done by an honored member of our association, and I know of no one who is so well situated and equipped to do the work as Dr. Bryan, situated as he is in proximity to all the advantages afforded by the Army Medical Museum and other facilities. I have advised this operation repeatedly, but the patients had always declined on account of the external scars which are necessarily produced.

Now also let me say that while I like to agree with almost anything that Dr. Mackenzie says in our discussions, I must differ with him totally about the use of 1-to-4,000 solution of bichloride of mercury. I don't see how I could get along without it in my operations about the nose, throat, and mouth. I am using it now three times in the twenty-four hours, in three or four cases, with absolutely no necrosis or other untoward effect—quite the contrary in one case where I recently removed all of the left side of the lower jaw, from the median line to the ramus, by means of the chisel and gouge, leaving only enough dead bone to protect the periosteum and insure new growth of bone, and give the jaw support. There is now almost entire reproduction of the jaw, and there has not been at any time any necrosis from the use of the mercury solution of 1 to 4,000. I have watched this growth of bone from day to day, removing the packing of iodoform gauze and using the douche of 1 to 4,000, then repacking, and nothing could be happier in its effect or more rapid in its progress.

I sincerely hope that Dr. Mackenzie's remarks will not lead a single person to abandon that most useful of all the antiseptic solutions known to surgery in any case where one can prevent the solution from getting into the lungs or stomach.

Dr. Wright: I remember that about a year ago I examined a large number of sections of the skull with especial reference to the questions which had been raised by Dr. Bryan, incited thereto by a pearl of wisdom dropped by him at our meeting at Rochester—that is, that the proximity of the mouths of the ducts of the frontal sinus and the ethmoid cells to that of the antrum of Highmore in the hiatus semilunaris would suggest that secretions from the ethmoid cells and the frontal sinus in many cases would drain into the antrum of Highmore. In my investigations I found that by filling the frontal sinus with water, the fluid, in almost every case, instead of going out through the nose passed into the antrum of Highmore. I have seen a number of cases in which pus in the antrum was the first symptom of disease of the frontal sinus. I recall a case in which the patient gave a clear history of previous disease of the frontal sinus. I made a large opening into the antrum of Highmore and found it contained a large quantity of pus; this secured a good result in spite of the fact that in this case I am sure that the disease originated in the frontal sinus. If the drainage is good, it is perfectly certain that many a patient with frontal-sinus disease may get well spontaneously, but if the duct is obstructed it is a very different matter. I can not quite agree with Dr. Bryan as to the rarity of frontal sinusitis. That is to say, I regard catarrhal inflammation of the frontal sinus as of rather frequent occurrence, and most of them get well of themselves. Although cases of acute abscess of the frontal sinus are rather uncommon, even many of them get well without radical treatment.

Dr. Nichols: Last year a case of this kind came under my care in the hospital, and it was doing very well after operation, when a young house surgeon introduced a solution of 1-to-3,000 bichloride of mercury. An intense degree of inflammation resulted, and a cellulitis was set up, obliging me to open the wound. The wound finally healed up, but the result was delayed several weeks by the use of the bichloride of mercury.

With regard to the remarks of Dr. Wright, as to the close relation between diseases of the frontal sinus and maxillary antrum, there is a point of differential diagnosis that I would submit for consideration: if the discharge comes from the frontal sinus, it will be observed to be in the form of long, wormy shreds; but if it originates in the antrum, the discharge is in the form of a thick mass of pus.

Dr. Mackenzie: Dr. Daly has misunderstood me. The structural changes produced by the antiseptic in question are only discoverable under the microscope. I have by no means discarded the use of bichloride of mercury. No sane man questions its value as an antiseptic; but, in open wounds, if I use it at all, I use it in very weak solutions.

Dr. Farlow: I would inquire of Dr. Bryan if it is not also possible for the disease to extend from the antrum of Highmore into the frontal sinuses, going from below upward? In some experiments made at the Harvard Medical School it was possible to inject fluids through the antrum into the frontal sinus, and an inflammatory process might extend in the same way. In the ordinary erect posture the drainage would naturally be in the opposite direction. In certain positions of the head, however, a disease which had originated in the antrum might extend to the frontal sinus.

Dr. Bryan: I am very glad to see that Dr. Wright has corroborated my remarks with regard to the frequency of communication between the frontal sinus and the antrum, for I think that this point has not received sufficient attention. I have seen a number of cases of antrum disease originating in the frontal and ethmoidal cavities. I have now a case of antrum disease following suppurating ethmoiditis. The physician who saw the case with me in consultation thought that it was some intramaxillary disease. Treatment was instituted, and the patient improved, but after an interval of eight years the patient has returned, and there is now decided involvement of the frontal sinus, with necrosis of the ethmoid cells, while the antrum is clear.

Now, with regard to the question of Dr. Farlow, as to whether or not the disease could extend from the maxillary sinus to the frontal sinus on account of working its way upward, I would say that these specimens made by Dr. Fillebrown decide this point, and it is seen that the discharge could work its way upward as well as downward.

In speaking upon the subject, I referred to the fact that in clinic cases of suppurating frontal sinusitis there is a possibility of invasion of the ethmoid as well. The point that I would insist upon is the frequency of the involvement of these cells. In such cases we can get at them by removal of the floor of the frontal sinus, as suggested by Janner; this is, however, a very serious operation.

With regard to antiseptics, I agree freely with Dr. Mackenzie as to the injury resulting from very strong solutions of antiseptics, especially as it happens that the discharges in such cases are very often kept up by strong solutions of bichloride of mercury. While I do use it as strong as 1 to 3,000, it is a question whether it is not better generally to use a saturated solution of boric acid, or hydrogen dioxide properly diluted.

Dr. DALY: After a long use of the several and varied preparations of peroxide of hydrogen I have concluded that they are almost worthless therapeutically.

(To be continued.)

Book Notices.

A Text-book of Mental Diseases. For the Use of Students and Practitioners of Medicine. By THEODORE H. KELLOGG, A. M., M. D., Late Medical Superintendent of Willard State Hospital, etc. With Illustrations in the Text. New York: William Wood & Company, 1897. Pp. xv–3 to 776. [Price, $6.]

THE volume before us is one of the most extensive treatises of mental diseases ever published in this country. It embodies the results of the author's many years' personal contact with the insane. One can not read it without becoming convinced that Dr. Kellogg is a practised and skillful alienist. This fact becomes particularly noticeable upon perusal of the chapter on therapeutics, which contains many valuable suggestions as to the prophylactic, general, and special treatment of insanity. Such adverse criticism as may be offered is concerned with the plan of the book rather than with the execution of that plan. There are 776 pages of reading matter, yet only 241 of them are concerned with the description of the special clinical forms of mental alienation. From this unequal allotment of space it results that the preliminary considerations regarding history, ætiology, evolution, and the somatic and psychological characteristics are more elaborate than is justified by the rather brief delineation of individual insane types. As a consequence, while the work will appeal to the expert, the student and general practitioner will miss some of the graphic pictures which are found in less pretentious works. For example, the chapter on melancholia will convey no very clear idea of the manifestations of that disease to any one who takes up its study for the first time; and the description of general paresis is not calculated to enable the general practitioner to recognize the initial stages of a disorder of which the medico-legal relations are the most important of any in psycho-pathology. As has been said, these errors, if they are to be regarded as such, are of plan rather than of its fulfillment. To the physician accustomed to insane patients such a method will appeal; but it is not adapted to render particular value to the general student.

System of Diseases of the Eye. By American, British, Dutch, French, German, and Spanish Authors. Edited by WILLIAM F. NORRIS, A. M., M. D., and CHARLES A. OLIVER, A. M., M. D., of Philadelphia. Volume II. Examination of the Eye, School Hygiene, Statistics of Blindness, and Antisepsis. With Thirteen Full-page Plates and Two Hundred and Fourteen Text Illustrations. Philadelphia: J. B. Lippincott Company, 1897. Pp. ix–11 to 556. [Price, $5.]

THE second volume of this treatise consists of fourteen chapters by as many different authors.

The first chapter, on The Methods of Determining the Acuity of Vision, is by Professor Snellen, of Utrecht, and is a clear and concise presentation of the subject.

The second chapter, on Mydiatrics and Meiotics, is by Dr. Snellen, the younger, who discusses the action of the various drugs in detail, giving naturally the most consideration to atropine, eserine, and pilocarpine, but making due mention of homatropine, daturine, duboisine, hyoscamine, scopolamine, cocaine, and the rarer ephedrine, mydrine, and gelsemine, among the mydriatics.

The third chapter is on Lateral Illumination, by Professor Laqueur, of Strassburg, who describes the various magnifying instruments employed in combination with lateral illumination, and the use of highly magnifying glasses with the ophthalmoscope. The translation of this article, by Dr. H. Friedenwald, of Baltimore, has been very well done.

In chapter four, the consideration of the ophthalmoscope and the art of ophthalmoscopy is by Dr. George M. Gould, of Philadelphia, and these subjects are treated of with the clearness and smoothness so characteristic of this well-known author. This article is well illustrated.

Chapter five is devoted to a consideration of skiascopy and its practical application, by Dr. Edward Jackson, of Philadelphia, beginning with the optical principles involved. It is practically a condensation of Dr. Jackson's monograph on the subject formerly reviewed in these columns. The paucity of illustration of this subject is to be regretted.

In the sixth chapter, Dr. Javal, the younger, discusses the subject of ophthalmometry and its clinical applications, beginning with a description of the original ophthalmometer of Helmholtz. This scientific article is profusely illustrated, and among the illustrations are some interesting presentations of the images of a keratoscopic disc reflected on the cornea. The chapter also contains a very clear presentation of the subject of ophthalmometry of the posterior surface of the cornea, with a description of Tscherning's ophthalmophakometer.

In chapter seven, Dr. William S. Dennett has given an altogether admirable article on Prisms and Prismometry. In perusing this article the reader can not but be persuaded that the writing has been a labor of love on the part of the author. The chapter contains several useful tables, one particularly valuable, showing the prismatic effect of decentring any lens made from the formula tan. $x = \frac{d}{f}$; x being the deviating angle of the virtual prism, d the decentring in millimetres, and f the focal length of the lens.

The eighth chapter, on the Principles of and the Methods for the Estimation of the Balance of the Extraocular Muscles, is by Dr. George T. Stevens. This article is noticeable for its extremely good English, as well as for the clear presentation of the views of the author. It contains an illustration of the tropometer of the author, with directions as to its method of employment.

Chapter nine, on Perimetry and its Clinical Value, by Dr. H. Wilbrand, of Hamburg, is one of the most exhaustive and important in the volume. It is profusely illustrated, and there is one excellent colored plate, representing Henschen's scheme of visual paths. The graphic work of the author in these illustrations deserves high praise. He first considers the normal field of vision and the methods of measuring it, and describes an ingenious bed-perimeter for use in examining bedridden patients. He then considers the field of vision in disturbances or diseases of the visual apparatus, beginning with lesions of the retina, optic disc, and chorioid, and then going on to lesions of the optic nerve, optic chiasm, optic tracts, primary optic centres, intracerebral tracts leading to the cortical centres, and visual centres in the cortex of the brain. The tables given are very good and of great assistance. The remarks on the visual field in simple glaucoma are particularly good, as is also the author's discussion of the field of vision in diseases affecting the optic nerves, in which due prominence is given to the anatomical condition of the optic nerves described by Henschen. Wilbrand's division of multiple sclerosis into various groups, according to the form of the defects in the field of vision, is very interesting. The whole article is of great scientific value.

In chapter ten Professor William Thomson and Dr. Carl Weiland give a full and critical survey of the subject of Color Blindness and the methods used in its detection. This includes a brief consideration of both congenital and acquired color-blindness, and the relation of the former to heredity and sex. Due mention is made of the various tests which have been employed in the detection of color-blindness, and of the modifications of these tests which time and experience have introduced. The authors conclude that the best practical test for congenital color-blindness is the matching of properly prepared colored worsteds, and where large bodies of men must be examined in a short time, as in the case of railway employees, give the preference to Thomson's test as used on the Pennsylvania Railway.

The eleventh chapter is for practical purposes the most important in the book. It is on School Hygiene, and is written by Professor S. D. Risley, of Philadelphia. In these days of increased demand for work on the part of the teacher, due to the constantly increasing standard of merit required by educators and educational institutions, this article is particularly timely. It will be welcomed by all medical inspectors of schools, and it is to be hoped that the suggestions and advice contained in its pages may be appreciated by the teachers in public and private schools, and bear fruit in the future in the greater attention paid to the proper hygienic arrangement of the schoolroom and in the greater care required in the regulation of the education of the young with defective eyes. The work of all schools should be so regulated that it shall rest as lightly as possible upon the growing child.

In the twelfth chapter, Dr. I. Minis Hays takes up the subject of Blindness, its Frequency, Causes, and Prevention. This paper bristles with statistics and tables, and considers both congenital and acquired blindness.

The chapter on Antisepsis is by Dr. Andrews, of New York, and is fully up to date.

The final chapter in the volume is devoted to a consideration of the Micro-organisms of the Conjunctiva and Lacrymal Sac, by Dr. McFarland and Dr. Kneass, of Philadelphia. They describe forty-two varieties of micro-organisms, illustrated by cultures of many non-pathogenic micro-organisms found in the conjunctiva, which would seem more suitable for a handbook on general bacteriology. To ophthalmologists in general, the greater part of this paper would not seem to be of any particular interest. Its value does not appear to be commensurate with its length, and as a book for reference it is not entirely complete, for no mention is made of the diplo-bacillus of Axenfeld or of the xerosis bacillus, with which we are now familiar.

The volume as a whole is fully equal to the first volume, and we shall look with interest for the concluding volumes, which will be of a more practical nature.

Eye Strain in Health and Disease. With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements without the Aid of Drugs. By Ambrose L. Ranney, A. M., M. D., Late Professor of the Anatomy of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Illustrated with Thirty-eight Wood Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1897. Pp. viii–321. [Price, $2.]

This volume consists of the substance of several monographs previously published, with the addition of considerable new matter, and the histories of many cases in detail, illustrating some apparently remarkable results of eye treatment alone upon various forms of chronic nervous disturbance which failed to yield to any other form of treatment. The author throughout reiterates his well-known views of the effects of eye strain, and on the results to be obtained from partial or complete tenotomy of one or more of the ocular muscles. The work is divided into ten chapters, the first two chapters being devoted to the bearings of eye strain upon the duration of human life and to the tests of vision and ocular movements. Then follow chapters on eye strain as a cause of headache and neuralgia, chorea, insomnia, chronic gastric and digestive disturbances, epilepsy, nervous prostration and insanity, and abnormal ocular conditions, with one chapter devoted to the surgical treatment of anomalies of the ocular muscles.

Very few have ever experienced the almost universal success with this form of treatment which the author seems to have met with. All seems to have been *couleur de rose.* Even the unsuccessful practitioner may, however, be interested in the reports of the cases presented, even if he does not agree with the author in his conclusions.

Practical Handbook of the Diseases of the Eye. By D. Chalmers Watson, M. B., C. M., Ophthalmic Surgeon, Marshall Street Dispensary, Edinburgh, etc. With Nine Colored Plates and Twenty-four Illustrations in the Text. New York: The Macmillan Company. Edinburgh: William F. Clay, 1897. Pp. x–236. [Price, $1.60.]

This little handbook is based upon the clinical teaching of Dr. Argyll Robertson, to whom it is dedicated. It is divided into twenty-two chapters, and contains a concise and practical account of the more common diseases and abnormal conditions of the eye and of the methods employed in their diagnosis and treatment. For that reason it is perhaps adapted to the wants of the medical student, as a clinical vade mecum. It is well printed on somewhat thin paper, and can easily be carried in the pocket.

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, B. A., M. D., B. Ch., B. A. O. (Dublin University), L. R. C. P. I., L. M., Assistant Master, Rotunda Hospital. With a Preface by W. J. Smyly, M. D., F. R. C. P. I., Late Master of the Rotunda Hospital. With Forty-five Illustrations, and an Appendix containing the Statistics of the Hospital for the Last Seven Years. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xx–323. [Price, $1.75.]

This little volume is, as the author describes it in his preface, "a short practice of midwifery. . . . with the object of giving a concise and practical description of the treatment which has been so successfully carried out in this hospital under the mastership of Dr. W. J. Smyly, and which is still followed by his successor, Dr. R. D. Purefoy."

Aside from being a most excellent description of the methods in use at this widely known institution, the work is so well done that it will be useful not only to students and nurses, for whom it was intended, but also for the practitioner who has but little time to read the more elaborate works upon obstetrics. One criticism we feel called upon to make upon the first chapter, Asepsis in Midwifery. This covers but six pages and has not received the care and attention that the rest of the work evidently has.

For students contemplating taking a course at the Rotunda or actually doing so this little volume will prove invaluable.

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. Macnaughton-Jones, M. D., M. Ch., Master of Obstetrics (Honoris Causa), Royal University of Ireland, etc. Seventh Edition, Revised and Enlarged. With Five Hundred and Sixty-five Illustrations. New York: William Wood & Company, 1897. Pp. xxiv–909.

That the writer of this work should deem it necessary to publish still another edition shows that he intends it to keep fully abreast with the progress of gynæcological work. The sixth edition, which appeared two years ago, has been completely rewritten and has had much added to it in the production of this new edition.

The first three chapters of the work are devoted to the description of the pelvic organs, the various instruments used in gynæcology, and the methods of examination. The author, though recognizing the dangers attending the use of tents, seems to advocate their use more than is usually done.

The three chapters on the disorders of menstruation are full and complete. A hundred pages are devoted to uterine displacements. A large number of operations are here described. It seems as if suspension of the uterus and vaginal fixation, and their respective dangers, should have received more attention. In the treatment of prolapsus uteri no mention whatever is made of suspension of the uterus. Pelvic hæmorrhage and tubal pregnancy are considered in two separate chapters. The one on tubal pregnancy is by Mr. Bland Sutton, and is written in his usual able manner. It is only to be regretted that but eleven pages are devoted to this important subject.

The subject of fibroid tumors, especially their operative treatment, is handled in a thorough manner. Here again we find a large number of operations, differing only in small points, described in detail. Deciduoma malignum is considered in a short chapter. The descriptions of carcinoma and sarcoma of the uterus are clear and concise. The indications for operation and the relative merits of the different operations are discussed with fairness. The classifications of the affections of the Falloppian tubes and of the ovaries are simple though complete, both from the clinical and from the pathological side. Under the head of pathology of ovarian cystoma we find another chapter by Mr. Bland Sutton. Among the fifty pages devoted to the urinary organs, the description of work being done on the ureters is specially good. Dr. Kelly's method of catheterism is described minutely, as are also the recent operations for ureteral anastomosis. The final chapters in the book are on the rectum, sterility, electrotherapeutics, and massage.

Throughout the book are described numerous cases illustrating the different subjects. The work has a decided cosmopolitan character and is without doubt one of the best of the smaller works on gynæcology.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part XI. Pp. 251 to 268. [Price, $3 each part.]

Manual of Bacteriology. By Robert Muir, M. A., M. D., F. R. C. P. Ed., Lecturer on Pathological Bacteriology, and Senior Assistant to the Professor of Pathology, University of Edinburgh, etc., and James Ritchie, M. A., M. D., B. Sc., Lecturer in Pathology, University of Oxford. With One Hundred and Eight Illustrations. Edinburgh and London: Young J. Pentland. New York: The Macmillan Company, 1897. Pp. xvi–519. [Price, $3.25.]

Notes on Pathology. For Students' Use. By W. A. Evans, B. Sc., M. D., Professor of Pathology, Medical School of the University of Illinois. Chicago: The W. T. Keener Company, 1897. Pp. 4 to 472. [Price, $1.50.]

Rheumatism and its Treatment by the Use of the Percusso-punctator. By J. Brindley James, M. R. C. S. Eng., Licentiate of the Royal College of Physicians of Ireland, etc. Second Edition. London: The Rebman Publishing Company, Ltd., 1897. Pp. 7 to 39. [Price, 2s.]

The Scientific Basis of Medicine. By I. W. Heysinger, M. A., M. D. Philadelphia: Boericke & Tafel, 1897. Pp. 3 to 121. [Price, 50 cents.]

Handbuch der Therapie innerer Krankheiten, in sieben Bänden. Herausgegeben von Dr. F. Penzoldt, Professor in Erlangen, und Dr. R. Stintzing, Professor in Jena. Zweite theilweise umgearbeitete Auflage.

Zweite Lieferung. Mit 7 Abbildungen im Text. Dritte Lieferung. Mit 21 Abbildungen im Text. Jena: Gustav Fischer, 1897. Pp. 241 to 617.

Transactions of the American Gynæcological Society. Volume XXII. For the Year 1897.

The American Academy of Railway Surgeons. Report of the Third Annual Meeting, held in Chicago, September 23, 24, and 25, 1896.

Interrupted Respiration; a Study of Certain Physical Signs of Diseases of the Chest. By J. N. Hall, M. D., of Denver, Colorado. [Reprinted from the *Journal of the American Medical Association.*]

A Case of Double Pulmonic Murmur, with Diastolic Thrill. By J. N. Hall, M. D.

A Case of Pulsating Pleurisy. By J. N. Hall, M. D. [Reprinted from the *Medical News.*]

Phthisis Originating in Colorado. By J. N. Hall, M. D. [Reprinted from the *Denver Medical Times.*]

Rheumatism. By E. B. Borland, M. D., of Pittsburgh. [Reprinted from the *Pennsylvania Medical Journal.*]

The Curability of Pulmonary Tuberculosis. By E. B. Borland, M. D. [Reprinted from the *Jburnal of the American Medical Association.*]

A Plea for a Uniform Diastase Test. By C. C. Fite, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Appendicitis. By William B. Van Lennep, M. D., of Philadelphia. [Reprinted from the *Hahnemannian Monthly.*]

Medical Expert Testimony. By Hon. William L. Foster, of Concord, New Hampshire. [Reprinted from the *Transactions of the New Hampshire Medical Society.*]

The Physical Signs of Bronchitis. By J. N. Hall, M. D. [Reprinted from the *Medical Fortnightly.*]

Miscellany.

Poisoning with Kerosene Oil.—In the *Medical News* for September 18th Dr. T. Edgar Hoffman, of Rochester, Indiana, reports that on the evening of July 10, 1897, a woman gave from twenty to thirty drops of kerosene oil to her fifteen-months-old son, who had a cold. When he saw the child, about twenty minutes later, it was limp and pallid, the pupils were contracted, the pulse was 140 and of fair quality, and the temperature in the groin was 101° F. The respirations were slow and there was no perceptible movement of the chest. The respiratory murmur was blowing, loud, and quickened, the expiratory murmur prolonged and diminished over the left side and entirely absent over the right side.

From the incoherent statements of the excited mother he inferred that the child had strangled and coughed immediately after taking the oil. He was undecided whether the condition found was due to inspiration of the oil, or to susceptibility to its toxic properties, or to both.

Immediately aromatic spirit of ammonia was administered and this was followed by repeated small doses of belladonna until all symptoms disappeared, leaving no bad results.

The accessible works on toxicology, says Dr. Hoffman, do not treat of petroleum poisoning, though cases are not rare, since the oil is in almost universal domestic use and is a popular local and internal remedy as an antiparasitic, antiseptic, counter-irritant, anthelminthic, antispasmodic, expectorant, and diaphoretic. Frese (*American Text-book of Therapeutics*, page 72) says it is also used as an intoxicant, producing hallucinations and emaciation.

According to Schmiedeberg, says Dr. Hoffman, petroleum belongs pharmacologically to the alcohol group. "Inhalation of the vapor induces hallucinations, heaviness of the head, vertigo, unconsciousness, and anæsthetic stupor; cyanosis, vomiting, and contracted pupils occur; one fatal case has been observed."

Anæmia and chronic bronchitis, Dr. Hoffman adds, have followed long exposure to the vapor. He goes on to say that two sets of symptoms have been observed from its internal use, according to Johanssen: 1. Vomiting, with irritation of the mouth and throat, diarrhœa and colic, involvement of the kidneys, with albumin and formed elements in the urine, which gives off the odor of petroleum or violets. 2. Headache, anxiety, vertigo, small and infrequent pulse, collapse, and sometimes tetanic convulsions. According to the *National Dispensatory*, vomiting does not occur, nor usually diarrhœa. Its application to the skin has resulted in severe inflammation; it may also produce general intoxication.

In the *Therapeutic Gazette* for September, 1895, page 604, says Dr. Hoffman, Dr. Cheves Bevill reported the case of a child, two years and a half old, who drank coal-oil. The resulting symptoms were stupor, contracted pupils (eyes closed), cold extremities, pulse 135 and very weak, respirations 35 to 40, temperature 97° F., and the odor of the oil in the breath. Later, the throat became red and scalded-looking, and there were purging, photophobia, slight suppression of urine, and albuminuria. The patient recovered. The *Medical Record* for January 2, 1897, printed an abstract from the *Berliner klinische Wochenschrift* of the report of a case by Dr. Johanssen. A rhachitic child, who had had diarrhœa, swallowed an unknown amount of the oil. This was followed by vomiting and unconsciousness, and death in coma occurred three hours after the patient was admitted to the hospital. Frequent pulse, difficult breathing, and comparatively low temperature were observed. He refers to two other cases in children, both of whom recovered.

Cholecystitis in Typhoid Fever.—V. Dungern (*Münchener medicinische Wochenschrift*, June 29, 1897; *British Medical Journal*, September 11, 1897) first observes that mixed infections are very important in typhoid fever, but that the typhoid bacillus may unquestionably be the cause of some complications. Severe complications involving the biliary passages are rare in typhoid fever, and here the typhoid bacillus itself is very frequently the cause. As a result of the penetration of the typhoid bacillus into the gall bladder, gallstones may ultimately occur. The author is acquainted with only four cases of cholecystitis with or without calculus formation in which the typhoid bacillus was the cause. He gives short details of these four recorded cases, and adds the following one: A woman, aged forty-six years, had had typhoid fever fourteen years and a half previously. Nearly five years afterward, she had attacks of pain accompanied by vomiting, but without jaundice. During the next one or two years she had many attacks, but then remained quite free from them for six years. The attacks then recurred, and a hard swelling was felt in the region of the gall bladder. This swelling was cut down upon by Kraske, an abscess was opened, and one hundred and fifty cubic centimetres of brownish-yellow pus were evacuated. The pus was not bile-stained. Any connection of the abscess with the gall bladder was not vigorously sought for. No gallstones were found, but occasionally the discharge was stained with bile. The typhoid bacillus was found in the pus in pure culture. It was submitted to all the ordinary tests and gave the serum reaction. It is most probable that the typhoid bacillus penetrated into the gall bladder at the time of the typhoid fever, but the interval of five years before the first attack of biliary colic is striking. In the last year of the six years' interval the patient suffered from a periostitis of the lower jaw which may also have been due to the typhoid bacillus. If these suppositions are true, the typhoid bacillus retained its vitality for fourteen years and a half. The patient's blood produced immobilization and agglutination in typhoid bacilli. The typhoid infection has been known to involve the biliary system even without any intestinal lesion. The author then refers to the *Bacilllus coli communis* and its relation to suppuration; this microorganism may even produce a disease not unlike typhoid fever. The typhoid bacilli from the author's case proved themselves to be virulent when injected into animals, but the virulence was slight.

The British Medical Association's Annual Dinner.—An esteemed correspondent writes as follows: "The most massive and thoroughly British feature at the meeting was the dinner. The sections were so extremely similar to the same divisions at our own national medical gatherings that one had to forcibly recall one's self every now and then to the fact that one was in a 'foreign' assemblage. In the general sessions there was an unaccustomed halo of titled grandeur around the president's chair, and the addresses were a trifle less encyclopædic, less strenuous to bring the history of the branch up to a late hour of the night before, but in all other respects the atmosphere was most familiar. At the dinner, however, the two ways parted. Every one knows what a serious matter the function is of itself to an Englishman. It is one of his most cherished institutions, older than the Magna Charta and almost as memorable. It is one of the laws of the Medes and Persians that it shall open with prayer, and the toast list begin with 'The Queen' and continue through 'The Houses of Parliament' and 'The Army and Navy' down to 'Our Host.' It has two solemn chants peculiar to it—one, For He is a Jolly Good Fellow, which may be sung as often as desired during the proceedings, the other, God Save the Queen, which may be sung but once, at the close. And the whole noble ritual was performed at Montreal. There were six hundred guests, thirty-three speakers, a military band to lead the choral responses, and the bugler of a Highland regiment in full uniform to signal 'Order!' for the toasts.

"So rigid a form, although impressive, has of course the drawback of making all dinners rather similar, and except for the last half-dozen speeches and the titles of two or three of the other speakers one would hardly have recognized it as a distinctively medical occasion. It also makes it extremely difficult to say anything either unusual or interesting in responding to the toasts. Indeed, the average Briton gives up all hope of this, rises at the call of the chair in the spirit of Nelson's dictum, 'England expects that every man this day will do his duty,' buttons up his coat, clears his throat, and plunges, or, more accurately, wades painfully in. One hardly knows which to admire most, the dogged and self-sacrificing bravery of the half-choking speaker or the noble endurance of the audience.

"There were several notable exceptions, such as the touching words of dear old Lord Lister, the witty epigrams of the representative of the clergy, the brilliant speech of Dr. Keen, which, even at two o'clock in the morning, roused and fired the whole audience; but the general impression from the whole six hours of the ceremonial was that the English still, as in the days of Froissart, 'love to take their pleasures sadly.'"

The Vermont State Medical Society held its eighty-fourth annual meeting in St. Albans on Thursday and Friday, October 14th and 15th, under the presidency of Dr. F. R. Stoddard, of Shelbourne.

Urotropine in the Treatment of Cystitis with Ammoniacal Urine.—Nicolaier, who introduced urotropine into therapeutics, says (*Aerztliche Praktiker*, 1897, No. 12) that, as regards the dose, his experience would show that daily amounts of twenty-two grains and a half should not be exceeded. He has found that even when a much larger single dose was well borne its continued use for longer periods of time caused unpleasant by-effects in a number of cases. These consisted of a burning sensation in the vesical region, appearing usually after urination and radiating into the urethra, and occasionally also of frequent micturition. If under these circumstances the administration of larger doses of the drug is continued the symptoms increase in severity, he says, and red blood-corpuscles appear in the urinary sediment. But these symptoms soon disappear, and the secretion quickly regains its normal character when the use of the drug is stopped or the dose diminished.

In cystitis with ammoniacal fermentation of the urine, one pastil of seven grains and a half dissolved in half a pint of plain or carbonated water, at the ordinary temperature, should be administered three times a day, after meals, during the first two days. Its action, says the author, is usually manifest by that time, and he is then in the habit of diminishing the daily amount to fifteen grains, giving one pastil morning and night. Later on a daily dose of seven grains and a half is sufficient in many cases.

In daily amounts not exceeding fifteen grains urotropine is well borne for a long time; some patients affected with the uric-acid diathesis have used it almost uninterruptedly for one or two years; and one patient took twenty-two grains and a half daily for almost nine months continuously without any trouble. The author has never seen any disagreeable symptoms on the part of the gastro-intestinal tract from its use.

Under the influence of the drug, he says, there very rapidly occurs a marked change in the composition of the urine in these cases of cystitis with ammoniacal decomposition. First the ammoniacal smell of the freshly voided urine diminishes in intensity and soon entirely disappears. Then the reaction, not only of the fresh urine, but also of the entire daily quantity, becomes acid again. The urine becomes clearer, the triple-phosphate and urate-of-ammonium crystals disappear, and the serious troubles so frequently caused by the abnormal constitution of the urine cease. The amount of pus corpuscles also diminishes; these structures may entirely disappear, but more frequently they persist, though in diminished quantity, for a considable time.

The author calls special attention to the fact that urotropine does not act by killing the micro-organisms and spores that cause the ammoniacal fermentation; it merely prevents their development. This is shown, he says, by the fact that after the ammoniacal decomposition of the urine has ceased under the use of the drug for several days it begins again after its discontinuance. Urotropine must, therefore, be taken steadily for some time, and then when its use is stopped the ammoniacal decomposition may not reappear. He has observed a very severe case of cystitis with ammoniacal decomposition of the urine which caused the patient great pain and was not relieved by irrigation of the bladder with disinfectant solutions and the use of internal remedies, in which urotropine caused the fermentation to cease and remedied the painful symptoms, and after three months' use of the drug the difficulties did not reappear after it was stopped. The freshly voided urine remained acid and contained only small quantities of pus corpuscles.

It is a remarkable fact, says the author, that the urine voided after the ingestion of urotropine becomes ammoniacal at ordinary temperatures; but it remains clear and preserves its acid reaction when kept at a temperature of 98.6° F. in the incubator; and even the addition of several drops of urine in a condition of ammoniacal fermentation, several days later, does not set up the same process in the specimen. Evidently, he remarks, there must arise from the urotropine, at the temperature of the body, some substance that hinders the development of the micro-organisms that effect the ammoniacal fermentation. It is very possible, he thinks, that under these circumstances formaldehyde is separated from it, and that, as is well known, prevents bacterial development, even when present in the smallest quantities. But he has not as yet been able to prove this fact with certainty, even by boiling urine that has been kept for some time at a temperature of 98.6° F. with resorcin-soda lye, which is said to be a very delicate test for formaldehyde. The author emphasizes the fact that urotropine has been useful in his experience in cases of cystitis with decomposition of the urine in which even large doses of salicylate of sodium had been entirely useless. He has recorded two cases which prove this.

Some Points in the Treatment of Incontinence of Urine in Children.—In *Treatment* for September 9th Dr. J. A. Coutts remarks that in infancy incontinence of urine is physiological and a normal feature of the age, and is due to the urinary reflex being as yet not under the control of the brain. Its persistence beyond infancy is probably owing to imperfection of this control, except where it is directly referable to bad habits and deficient training. In the majority of cases the incontinence dates back to the period of infancy without a break; in a minority the habit is acquired in later years, frequently arising in these last from a definite assignable cause. With or without treatment the complaint has a tendency to subside at or about the age of puberty. When it persists beyond puberty the cases are generally very intractable, and most frequently found in the female sex. A combination of diurnal with nocturnal incontinence is admittedly of worse prognosis than when the incontinence is confined to the night time only. In many of these cases, as with obstinate incontinence generally, the disorder is only too often associated with unmistakable mental deficiency, and is merely one symptom of the blunted moral sense. But even in these last cases perseverance and training may do much to ameliorate, if not cure, the disorder.

The ordinary routine practice of waking the child at stated intervals to micturate needs, says Dr. Coutts, merely to be mentioned and commended. This simple procedure, if diligently carried out, is sufficient to cure the vast majority of cases of nocturnal incontinence of urine without any further treatment, medical or other. Of the value, in addition to the last, of restricting the liquids in the child's dietary during the latter hours of the day, there is no doubt. The author has the strongest conviction of the benefit accruing from this restriction of liquids in the vast majority of instances. But in a few cases it has seemed to him that this practice has possibly perpetuated and kept up the disorder that it attempted to cure, for in some children the mere presence in the bladder of highly concentrated urine, produced by the nightly restriction from liquids, has appeared sufficient to bring about expulsive action on the part of the urinary apparatus, the vesical mucous membrane being seemingly intolerant of such a urine. In obstinate cases, if on examination the urine presents a high specific gravity and a high degree of acidity, then, instead of limiting the liquids, he advises that trial should be made of encouraging the child to drink freely toward the end of the day. In a few cases by this reversal of the common practice he has scored a signal success. The number of such cases is, however, insignificant as compared with that where advantage was gained by adherence to the common routine. Still, small as the number of successes may be, the plan would seem worthy of trial in the class of cases indicated.

Of all the various drugs that have been commended, belladonna, and perhaps deservedly, takes the foremost place. At the present time, indeed, it would almost seem to have displaced all others, and with too many, the author fears, treatment of incontinence means the mere use of belladonna. But that belladonna often fails is admitted on all hands. Some of these failures doubtless arise from the method commonly pursued of giving the drug in divided doses throughout the day. A much more efficient plan is to give one single larger dose in the evening, and to gradually increase this every four or five days. In this way a large single dose can be gradually worked up to, and, if the incontinence ceases, can be as gradually lessened until the drug is finally abandoned. The author does not think belladonna can be fairly said to have failed until this method of a large single evening dose has been given a trial. But belladonna, however given, often fails, and then recourse must be had to other drugs.

Of these other drugs he is inclined to place most reliance on lycopodium. Its advantages in the treatment of incontinence of urine have been strongly advocated by his colleague, Dr. Eustace Smith, and others, but, as far as he can gather, its merits in this direction have as yet been recognized by only a small minority in the profession. While belladonna acts by paralyzing the detrusive muscular fibres of the bladder, lycopodium is stated to have a more selective sedative action on the vesical mucous membrane. The author has known lycopodium efficient in numerous instances where belladonna had entirely failed. His usual practice is to give twenty drops of the tincture three times a day to a small child, and work up gradually until doses of a drachm are given at the corresponding times. Possibly more could be given, as he has neither seen nor read of any poisonous qualities attaching to the drug. In this, however, he adds, his knowledge may be at fault. The recognized single dose for adults is generally given as from half a drachm to two drachms or more. Lycopodium has been said by some to be almost a specific in incontinence of urine, but this his experience does not confirm. Nevertheless, it has often stood him in good service when other drugs had failed, and he thinks it deserving of more extensive trial than it would seem as yet to have received.

In ordinary cases bromide of potassium has proved of less service in his hands than in those of some others. There are cases of incontinence, however, he says, in which bromide may prove of the utmost benefit. These are the ones in which the act of micturition ensues when waking is imminent or actually takes place. Here the beneficial action of the bromide lies more in its hypnotic effect, probably, than in any other influence it may exercise over the nervous system.

Strychnine given for its direct effect upon the spinal cord he has seen little benefit from. When the incontinence, however, has been accompanied with anæmia, lassitude, and other departures from normal health, then a combination of iron and strychnine has been of the greatest service. The improvement in the general health has often been accompanied with an improvement in the incontinence.

Of the value of opium, chloral, and some other drugs which have been advocated in the treatment of incontinence of urine, he pleads ignorance. He can only say that he has not been sufficiently impressed by the writings of those who have had experience of them to give any of them a trial.

When drugs fail, says Dr. Coutts, there are still other measures that may prove of service in obstinate cases. It has been noticed that in many instances the child retains his urine while lying asleep on his side, but that immediately he turns on to his back emission of urine takes place. Some older authorities advised blistering over the sacrum, mainly no doubt hoping that the irritation produced would prevent the child from turning on his back, and perhaps partly in the hope that some distant influence might be exercised by the blister over the reflex centre in the spinal cord. This practice is condemned by Sir Henry Thompson, but its occasional efficacy is probably undoubted. The child can be prevented from turning on his back by equally simple and less drastic means. It is quite easy to fix an ordinary bobbin over the lower spine by means of strapping. With such an arrangement, whenever the child attempts to turn on to his back, either the bobbin wakes him up or else he returns to his former position on his side. In either case the urine is retained in most instances.

The author does not favor circumcision in incontinence of urine unless there is undue tightness of the prepuce. In this last condition there are indications for circumcision apart from the question of the incontinence. If there is no phimosis, however, he regards the operation as uncalled for. Many cases of incontinence of urine, he says, are no doubt improved by circumcision, but this is probably due to the temporary influence of the resulting inflammation and could have been brought about by other and less stringent means. An equally large, or still more numerous, class of patients receive no benefit whatever from the operation.

Of injections of nitrate of silver into the urethra he has no experience, but says that Sir Henry Thompson speaks warmly of their value in either sex. He advocates their weekly administration in increasing strength up to that of ten grains of the salt to the ounce. The author sees objections to their use in boys, and still more so in the case of girls. At any rate he would only have recourse to them when all other measures had failed.

Whatever method is tried, any improvement is an encouragement for persevering with it in this troublesome disorder. Improvement when once it has started is generally continuous. Any break in the habit for a time, however short, is reason for hope that it may be permanent.

Evidence which tends to Weaken the Value of Widal's Typhoid Agglutination Reaction.—To one who listened to the recent elaborate and very valuable discussion upon serum diagnosis in typhoid fever at the last meeting of the American Medical Association, says an editorial writer in the *Journal of the American Medical Association* for September 18th, the testimony upon the value of this test seemed far from convincing. The discussion was carried on by some of the most prominent bacteriologists in America and dwelt in considerable detail upon many features of the Widal reaction. Still there was a diversity of opinion upon many essential features, and even after the report of the special committee appointed by the chairman to harmonize the views expressed, there were still elements of uncertainty about the matter.

A great deal was said about the importance of the technics to be employed in making the Widal serum test, and still there was scarcely a single point in the methods on which two observers agreed. Opinion differed as to the source of the serum, whether it should be from blood or blisters, or whether dried blood should be employed; though the reaction was obtained by serum from any of these sources. The dilution of the serum was another point upon which opinions varied, and this held true for the source, age, and virulence of the typhoid culture, for the dilution of the bacterial emulsion, and for the proportion of emulsion and serum. Then came the question of the agglutination reaction. What should be considered a reaction? How far should loss of motility and agglutination proper be given value? What should be considered the time limit of a reaction?

The single point upon which an almost unanimous opinion was obtained was with reference to the clinical value of the Widal reaction as a sign of typhoid fever.

The diversity of views expressed by these representative American scientists, the writer continues, is only a repetition of the opinions of observers in all parts of the world who have discussed this question, and while these discussions, especially when conducted as systematically as the one in Philadelphia, will soon enable us to decide upon the merits of the case, they all seem to foreshadow a disappointment for those enthusiasts who failed to exercise a due conservatism in forming their judgment upon the value of the Widal test. Even from the clinical standpoint there can scarcely be a doubt that the reaction has occasionally failed to appear when the blood of a typhoid fever patient has been used; and, on the other hand, the reaction has occasionally been obtained in a variety of other diseases. How far these results have been due to faulty technics is impossible to say, especially when it is so hard to decide upon what is to be regarded as correct.

It is well known among bacteriologists, says the writer, that there is a close biological relationship between the colon bacillus and the bacillus of typhoid fever; so close, indeed, is this relationship that many bacteriologists have come to regard the common bacillus of the intestine and the bacillus of typhoid fever as varieties of the same species. This view has been advanced from time to time, and is again strongly suggested in the elaborate studies by Adelaide Peckham (*Journal of Experimental Medicine*). Among other interesting and valuable studies upon these bacilli, this author has tested a large number of colon and typhoid bacilli from various sources as to their reaction with typhoid blood serum. A considerable number of cultures of what were regarded as typical typhoid bacilli failed to give a characteristic reaction, while at least two out of nineteen typical cultures of *Bacillus coli* responded perfectly to the serum test. These results, the writer remarks, are quite in accord with all the other so-called specific methods for the distinction of the typhoid and colon group of bacteria, and they seem to be a serious blow to the Widal tests, for upon the specificity of the reaction hinges much of its value in clinical diagnosis. If the colon bacillus will respond to the agglutination effect of serum from typhoid patients, why, asks the writer, will not the typhoid bacillus be agglutinated by the blood serum from colon-bacillus infections? He believes this will be found to be the case, and in support of this opinion says he has succeeded in obtaining a typical agglutination reaction with typhoid cultures in five out of seven cases of suppurative inflammation of the vermiform appendix by using the dried blood after the directions of Johnston. In three out of the five positive cases a bacillus corresponding perfectly to the colon type was alone isolated from the pus obtained at operation. The other patients had already been operated upon and no analysis of the pus was made. Such results seem suggestive, to say the least, says the writer, and they should be followed up.

Another curious feature about the agglutination of the typhoid bacillus, the writer goes on to say, has just been brought out by the experiments of Malvoz (*Annales de l'Institut Pasteur*), who has succeeded in producing a reaction with typhoid bacilli similar to that produced by typhoid serum, by various chemical substances. He mentions especially formaldehyde, corrosive sublimate, peroxide of hydrogen, and strong alcohol. Among the aniline colors, crysoidine, vesuvine, and safranine have the property of provoking a perfect agglutination even in very dilute solutions. Malvoz attempts to use this agglutinative action of chemicals for the distinction of colon and typhoid bacilli, and appears to find a considerable difference in the behavior of these two types. On this point, however, says the writer, judgment must be cautiously withheld, for in the failure of so many other tests it is improbable that this one of agglutination by chemic reagents will prove specific. As to the significance of these experiments in explaining the *modus operandi* of the agglutination reaction no opinion can at present be formed, and this is equally true as regards their bearing upon the clinical side of Widal's test.

The Relation of Mental Diseases to General Medicine.—Dr. Edward Cowles concluded an address with this title, before the Maine Medical Association, substantially as follows (*Boston Medical and Surgical Journal*, September 16, 1897):

The history of the case may reveal an excess of waste of nervous energy over its repair. This means a greater or less persistent fatigue or exhaustion of functional power in the neurone, which includes the power to assimilate nourishment. Thus exhaustion, once initiated in some degree, begets diminished nutrition and more relative exhaustion, if the cause continues. In many cases the balance continuously turns but slightly the wrong way, and the process is a long one; again, the exhausting influences are great and abrupt in their effect, even to mental shock. Thus we note the sequence of overwork and exhaustion. The toxic manifestations appear as effects of excessive waste products, there is deficient elimination from the overworked nerve cells, toxic materials enter the blood, nervous dyspepsia and constipation betray defective innervation, and in turn contribute to further disorders of nutrition. The same relative conditions may occur in the indolent and sedentary, through deficient elimination and lack of physiological exercise necessary to normal physiological growth. The mental signs, sometimes without any bodily signs, are those of loss of spirits or depression, attendant upon a vague sense of bodily ill-being, diminished power to apply the attention, and a tendency to worry unduly. These common symptoms of neurasthenia, that are so familiar to us, are striking expressions of ill-nourished and disordered neurones. The logical treatment of such conditions is by elimination to reduce the toxic conditions, rest, and nutrition.

Here is the prolific soil from which all nervous diseases may spring. Mental disorders beginning in such symptoms require only increase in degree to become pronounced melancholia; and graver degrees and effects of exhausting causes induce the more serious intellectual derangement in mania. The evolution of the groups of symptoms in these acute mental diseases, the common history of exhausting causes, the process of gradual convalescence as from a neurasthenic state, are all clearly explained on the basis of their being functional and curable conditions with toxic elements in their production. The course of development of the symptoms is in the order of overwork, exhaustion, and self-intoxication.

We have to consider that insanity may follow all forms of acute disease, or from the many forms of toxæmia which may affect the nutrition of the neurones, and that whatever the antecedent that induces the condition of nervous exhaustion, whether overwork, infectious fevers, or nutritional disorders, the same groups of mental symptoms oftenest appear. No explanation satisfies these clinical appearances so well as to ascribe the mental phenomena to one essential fact: reduction of functional power in the neurones. This accords with the pathological finding that the changes produced within the nerve cell appear to be essentially alike from poisons of widely different natures.

The terms "nervous exhaustion" and "exhausting influences" relate, in their strictest sense, to a condition of the neurone elements induced by excess of expenditure of energy over repair, along with which there is a toxic element the production and elimination of which are physiological and necessary. But the same relative condition is produced when there is small expenditure and deficient elimination, in respect to the mere vegetative processes, in persons unnaturally inactive, when the neural repair is, for any reason, still less than the waste. The fat neurasthenics described by Weir Mitchell belong to this class. In this case there may appear clinically the same reduction of functional power, nervous and mental, as in the first instance. Again, it may happen to persons of both classes that poisons from without, or produced within the body, may conflict with the physiological principle that the inner contents of a nerve cell are chemically built up into complex compounds, which constitute the material of energy and break down when the cell does its work. Any toxic cause, in the blood or tissues, that impairs or arrests this process, whether chemically or otherwise, must beget the same effect of a corresponding reduction of functional forces, and may produce like symptoms.

In like manner "nutrition" and "nutritional disorders" relate, in the end, to the chemical processes within the cell. It is not solely a matter of gain or loss of body weight; while this is a true criterion in most cases, there are many in which it is reasonable to conclude that the process of "nutrition" may go on well, even to its final stage in the nerve cell, and there become imperfect or arrested as by a chemical fault, perhaps due to some toxæmic element. We certainly see examples of loss of weight, sometimes rapid, not sufficiently accounted for by any apparent fault of digestion, when an abundance of food is taken that would ordinarily fatten. In the broader conception of all function-reducing factors as essentially "exhausting influences" we are enabled to extend the demonstrations of the phenomena of fatigue to explain the remarkable uniformity in groups of mental symptoms, for example, when arising from most varied causes, or in the absence of any apparent cause.

It is interesting to consider that, epoch-making and remarkable in simplicity and clearness as are these new explanations of disease processes, they are still the fulfillment of expectations that have been long entertained. As Van Gieson remarks, our belief that the large majority of diseases are due to the circulation of poisons within the body is a result to which we have gradually come. Before we had sufficient pathological evidence, it was naturally thought that the continued fevers, the exanthemata, syphilis, tuberculosis, rabies, tetanus, hydrophobia, and in fact all the infectious and contagious diseases, were the manifestations of poisons entering from without or elaborated within the body. Bacteriology has shown the true relation of micro-organisms to some of these diseases. Functional disorders, degenerations, necroses, and scleroses are explained as one general pathological process from diverse causes, though presenting different appearances in different tissues. The brilliant example of diphtheria and its now familiar antitoxine treatment gives us the clew to new and scientific modes of treatment of a rapidly widening range of disease.

This brings us exactly to the thought to which I have wished to lead you. The treatment of mental diseases is being brought more closely than ever to common ground with general diseases. In your practice you may no longer look upon insanity as peculiarly a pathological mystery. The acute and so-called functional forms certainly are not so. For general paralysis you find, as diagnostic, certain definite sensory and motor signs along with characteristic groupings of mental symptoms. Moreover, its most rational explanation is as having an initial stage of cortical exhaustion, whether toxic or not. In the other great division, that of delusional insanity arising primarily without immediately recognizable exhausting causes, there must be conceived an inherent asthenia of the nervous system, by which it is rendered less resistive, even to the initial stress of its own normal activities.

There is just one thing more in the philosophy of this matter that ought to be said here. The purely mental causes or beginnings of insanity should always be taken into account. There is only need to remember the intimate connection of mind and body, the physical accompaniments of the emotions, the depressing effects of fear through the sympathetic and vasomotor mechanisms, upon circulation and nutrition. Mental shock, or prolonged anxiety and worry from real causes, may initiate the exhaustion from which all else may follow, in the regular pathological sequence which I have described, on the lines of overwork of the neurone, exhaustion, self-intoxication, and increasingly aggravated mental symptoms in a descending scale. The process of cure should begin with the arrest of this descent toward dementia, and must go on with a gradual and often slow recovery of functional power in the neurone. If the morbid process has not gone too far, regeneration of the neurone and the cell contents may occur, otherwise there may be some degree of chronic degeneration, and, thus begun, the descent continues toward dementia.

Now that mental pathology is becoming clearer in the light of general pathology, shall not a new interest arise in the study and treatment of insanity? Already the practice of alienists is getting upon new lines. Great success has been attained in some torpid mental and bodily states of long standing by the use of thyreoid extract. Much attention is being given to the disinfection of the intestinal canal and its systematic and thorough evacuation by high enemata. Elimination of retained self-intoxicants has been attempted with some success by the subcutaneous injection of large doses of a solution of common salt. These and other procedures are still largely experimental. But, whatever you do, while you employ all the effective tonics, of which nutrition, rest, and sleep are the best, there is one controlling practical principle to be remembered, and, with this, one special caution. It is a safe rule that mental symptoms always mean weakness; excitement is an extreme degree of irritable weakness, in which there is great exhaustion in the mechanism of mental control. This thought should beget care in the use of sedatives and hypnotics. Beware of the coal-tar compounds and the like; they are good and sometimes necessary for proper use, but not for many days in succession. Change them and omit for a while; they go against nutrition, and drug intoxication often aggravates the disease and is mistaken for it. When your patient is taking food well, be content with his getting two or three hours of sleep or less in each twenty-four hours, even when excited. Such sleep is better than when it is drug produced. When the appetite flags and sleep is not produced by persistence in hypnotics, the complete suspension of all medicines, and frequent feeding will often be followed by gradual cessation of excitement, a clearing tongue, and improvement in sleep. These brief hints are simply mentioned by way of example. Above all things it should be remembered that the indication is always for a "supporting treatment."

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VARYING INFECTION IN PNEUMONIA.

By W. H. THOMSON, M. D., LL. D.

Of late years lobar pneumonia often fails to follow the definite course commonly ascribed to it. While its onset remains much the same in its suddenness, and in the rapid development of its acute symptoms, yet for some time I have declined to fix the probable date of the crisis or the duration of its subsequent stages. It may be that the advent in 1890–'91 of the severest and most prolonged visitation of epidemic influenza recorded in history may have something to do with this change by contributing the influence of a mixed infection, but whatever be the cause, there is little doubt that acute lobar pneumonia now often departs more widely from its former characteristic course. In the histories of a series of eleven cases occurring consecutively in my winter service in Bellevue Hospital, in only three of them could it be said that they conformed to the old-fashioned type, with a definite crisis and a progressive change for the better afterward, while in three a partial crisis only occurred, and in five none at all. In eight out of the eleven the convalescence was very tedious, and marked by a variety of constitutional symptoms, in which often the essentially toxic nature of the disease was strikingly indicated. Nothing could better illustrate than they did what a gain it was to modern pathology when lobar pneumonia was finally recognized as more an infection than an inflammation, and that its danger is due rather to systemic poisoning than to pulmonary damage. That infections by microorganisms, however, should vary in their developments from time to time is what we should expect, and it is this feature which a brief abstract of these clinical histories seems particularly to exemplify.

Case I.—Patrick C., aged thirty-eight years; Irish; single; laborer. Hard drinker. Began twelve days before admission with pain in right side and cough, accompanied after two days with bloody expectoration. For the first two days had repeated chills and profuse perspiration, but he continued about for a week, eating little, but drinking steadily. He then took to his bed and was admitted December 7th, when pneumonic consolidation was found in his right lung posteriorly, extending to the spine of the scapula. From that date, as in other cases of alcoholic pneumonia, his temperature ran low, from 100° to 102.8°, gradually falling to normal in twenty-one days.

Case II.—Bartholomew S., aged thirty years; single; Irish; laborer; admitted December 9th; strongly built man; had always been healthy and temperate. Eight days before admission began with a chill in the morning, and had another the following morning, followed by pain in the right side, cough, and bloody expectoration. Patient delirious on admission. Temperature, 104°. Lower lobe of right lung consolidated. Next day, temperature 103°. From this time on the decline in temperature and in pulse and respiration frequency was very gradual, with irregular fluctuations in each. He became dangerously weak; his pulse often counted 50, with the temperature 99° to 100.° The consolidation remained stationary for twenty-eight days. Discharged cured forty days after the onset of the disease.

Case III.—Mary R., aged thirty-eight years; married; domestic; family history good; admitted December 23d; had always been healthy till she went out in the yard with nothing but a wrapper on, when she was suddenly seized with a chill lasting five minutes, followed soon by a severe pain in the right side just below the nipple. Admitted on the seventh day of her disease with temperature 103°. On the next day temperature 104°. That night it fell to 99°, but then rose to 101°, and remained fluctuating near that point for three weeks, having very weak heart action most of the time. She did not leave the hospital till thirty-one days after admission.

Case IV.—John T., aged thirty-one years; single; English; clerk; admitted December 23d. He began five days before admission with prolonged and severe chills, which recurred repeatedly for two days, ending on the third day with cough and bloody expectoration. On that day he had sharp pain on both sides of the chest, with great pain in the back and extreme sensitiveness of the skin over the whole chest. For three days had diarrhœa and frontal headache. Auscultation showed bronchial breathing from base to apex of left lung posteriorly, and in the right lung bronchial breathing from the spine of the scapula to ninth rib. Temperature on admission, 102.8°, about which figure it remained for six days and then dropped to 99°. Then, though the temperature and respirations came down to nearly normal and the pulse fell to between 60 and 48, the consolidation in the right lung cleared up very slowly, while for weeks it remained unchanged in the left lung, and his heart weakness was extreme. His sputum was examined for tubercle bacilli, but none were found, but instead pneumococci were constant and abundant to the end. He was not discharged till he had been fifty-one days in the hospital, still expectorating pneumococci.

Case V.—Agnes R., aged eighteen years; United States; single; domestic; admitted December 26. Says she caught a cold with cough some two weeks before she was confined on Christmas eve. The night following her confinement she had a chill and the cough became bloody. Admitted on the next day; lower lobe of left lung consolidated; temperature, 105°. On the next day highest temperature 105.8°. Crisis on the next morning; temperature, 99°. After this she rapidly got well, the consolidation clearing up in a week.

Case VI.—J. W. B., aged twenty-nine years; United States; single; cloth sponger; admitted December 28th. Always a healthy, temperate, and strong man up to his present illness. Four days before admission he was seized with a heavy chill, which he says lasted from 10 a. m. to 7 p. m., with violent headache, cough, and severe pain in right axillary line. Temperature on admission, 106°; consolidation of lower lobe of right lung complete. His temperature then declined for fifteen days till it reached 99.2°; then rose to 103°, and did not reach 99° again for seven days; then rose again to 102.8°, and did not come down again for nine days to 98.4°; then fluctuated between that figure and 101.2° for seven days more, after which convalescence became established. Meantime during these fluctuations he showed no fresh pneumonic changes nor bronchitis, and, though his consolidation remained unchanged for twenty-three days, yet at no time did he show the cardiac debility of the other cases. There was one complication, however, of a severe otitis media, which came on about the twelfth day of his disease. The pus was examined for pneumococci, but none were found, nor were they ever found in repeated examinations of the sputum.

Case VII.—Patrick M., aged thirty-seven years; Irish; hatter; chronic hard drinker; admitted December 29th. Four days before began with a hard chill, severe pain just below nipple on the right side and in the back, with cough and reddish expectoration. The next day he noticed that he was jaundiced and he had continued vomiting. His temperature remained about 104° for two days after admission when it dropped to 99°. He, however, then became delirious and continued so for twelve days, with temperature about 100°. After that he very slowly improved, his lung not clearing up or his temperature coming down to normal till the twenty-ninth day after admission.

Case VIII.—A. E. U., aged thirty-two years; United States; admitted January 6th. This case ran the most atypical course of the list. He was admitted delirious, with almost complete consolidation of the left lung. Temperature, 104.8°. It was difficult to obtain any items of the antecedent history of his illness; the only information vouchsafed by the friend who brought him was that he had been an "absinthe fiend." His general condition was grave, pulse very weak, and tongue dry and dark. He remained in a state of low delirium, often amounting to complete coma, for thirty-four days. Three days after admission his temperature dropped to 101.6°, and in two days more to 99.2°, but then fluctuated for days together, rising to 103° and dropping to 99°, while he repeatedly seemed about to die from heart failure. Pulse averaged about 80, but was constantly weak and irregular. His delirium ceased about the thirty-sixth day after admission, after which he gradually recovered, and was discharged after he had been in the hospital for fifty-two days. His sputum, when it could be obtained, always showed pneumococci.

Case IX.—Frank C., aged twenty-five years; United States; single; clerk; temperate; admitted January 10th. Always enjoyed good health till January 5th, when he had a chill after going out without an overcoat. With the chill pain came on below the right nipple, with cough and yellowish expectoration, then reddish, also with nausea and vomiting and profuse sweats. Temperature on admission, 104.6°, and in three days it reached 106°; on the fourth day, crisis, dropping to 99°, but instead of convalescing he remained in a very low state for thirteen days, and then on the eighteenth day after admission he had a profuse epistaxis, so that his posterior nares had to be plugged. His temperature then rose for six days to about 101°, and he had incontinence of urine. His temperature did not reach normal, and he needed constant stimulation till the twenty-eighth day after admission, when he slowly convalesced, and was discharged after forty-four days' stay in hospital.

Case X.—Hugh R., aged thirty years; single; Irish; laborer; a chronic free drinker; admitted January 28th. Six years ago had pneumonia on his right side. Four days before admission began with a chill, cough, vomiting, and diarrhœa. Temperature on admission, 105.2°. Crisis on sixth day of admission, tenth of disease; right lung involved. The crisis was followed by steady recovery. Sputum showed no pneumococci.

Case XI.—G. D. F., aged twenty years; single, Greek; peddler; admitted January 24th. Always felt perfectly healthy till this attack. On January 20th he began with a pain at the apex of the right lung, with dyspnœa, but with no chill and no cough. Had repeated nosebleed, which continued to recur after admission; also constant frontal headache for three days. Temperature on admission was only 101.4°, and as there was consolidation found, with no râles, at his right apex, his sputum was examined for tubercle bacilli, but with negative results. In the afternoon of the next day, however, without a chill, his temperature rose to 105.4°, and continued at high figures for five days, breaking then after an ice-water bath. His convalescence after that was fairly steady and occupied two weeks.

In reviewing the clinical features of these cases we note that they all began with a pronounced chill or chills, except Case XI, in which the patient never had any. In five of the eleven there was no definite crisis, in three there was a partial crisis, in two it was typical, and in one fairly so after a cold bath. In these two, Cases V and X, in which the recovery was steady and shortest of all, one, a woman, had the pneumonia set in on the second day in childbed; the other, a man, was a confirmed alcoholic. Of those who had no crisis, the first, Case I, was a chronic drunkard, but the disease ran a mild course. The second, Case II, had been a strong, healthy, and temperate man, but the consolidation continued for four weeks, during most of which time his situation seemed desperate from heart weakness. The third, Case IV, had double pneumonia, but his highest temperature barely reached 103°, and then his lungs took six weeks to clear up, during the most of which time he lay in a semicomatose condition with intense cardiac depression. The fourth, Case VI, a strong man like Case II, for some days had the highest temperature of all, followed by irregular lysis, but from first to last showed no cardiac weakness and no complication except suppurative otitis media. The frequent association of the pneumococcus with suppurative otitis (Netter, in forty-six children, in whom he found the pneumococcus in their inflammations, found it in twenty-nine cases of otitis and in only one with pneumonia) caused us to look for the presence of that organism in the discharge, but not only was it not found in it, but he was also one of the three in the list in whom no pneumococcus was found in the sputum. The fifth, Case VIII, was delirious or comatose for more than five weeks, during which time his pulse was frequently imperceptible at the wrist, and nothing but the most vigorous exhibition of cardiac stimulants appeared to keep him alive.

Nor, upon examination, did the history of the three cases with partial crisis show much difference in the clinical aspects of their slow convalescence, especially as regards persistent cardiac depression. It is curious that in the two cases with typical crises and most rapid recovery no pneumococci were found in the sputum, while in the worst cases their presence was constant.

In none of the cases was cyanosis a marked symptom at any time. I am uncertain to what this symptom can be attributed in pneumonia, for it does not always go with either distinct pulmonary or cardiac embarrassment. I once saw a gentleman in whom pneumonia began with consolidation of the right apex very rapidly after the initial chill, and, though the bronchial breathing advanced by inches till the whole lung became solid, yet neither I, nor his attending physician who examined him repeatedly, ever detected pneumonic crepitation at the edges of the progressing consolidation. Meanwhile he showed pronounced cyanosis from the beginning, so that at his death on the sixth day he was universally leaden in hue, and yet he had vigorous heart action and but moderate dyspnœa to near his end. I have also seen much cyanosis with a surprisingly small amount of lung involved, though undoubtedly in most cases it is a danger signal of cardiac debility.

There is no disease so suggestive of the problems of microbic infection as pneumonia. That the pneumococcus, which sojourns indefinitely in the mouths of so many persons without causing the least disturbance, should, often after a brief exposure to chill, as in Cases III and IX of this list, suddenly invade the lungs with such virulent power, or, in other instances, carry inflammation to the ears, heart, pleura, meninges, joints, etc., shows us how much we have yet to learn about the life history of pathogenic micro-organisms. That the pneumococcus can both lose and then regain its virulence, has been abundantly demonstrated in the laboratory. Kruse and Panisi,* by repeated cultivations in artificial media, caused the virulence to disappear. Then by injecting large quantities into animals the virulence would be restored, along with the old biological characteristics of its growth. Eyre and Washbourn † find that the majority of pneumococci soon die in broth cultivations, but some survive even for three months and then start afresh, but this new generation differs in morphology, biology, and pathogenic properties from the parent stock. It is in fact a new variety, possessing practically no virulence and growing luxuriantly on media on which the ordinary pneumococcus soon dies. They cultivated one of these altered forms on various media and then injected it in enormous doses into the peritoneal cavity of a number of rabbits with no pathogenic effect. But at last one rabbit succumbed to a moderate dose, and from its blood cultivations were obtained which had all the characters of a typical pneumococcus. As they remark: "Thus by a single passage through the body of a rabbit, which for some unknown cause was abnormally susceptible, our variety reverted to its original type, and then by a few more passages through rabbits it regained its original virulence." Such experimental observations of the possible variability of this infective organism suggest the likelihood of corresponding variations in its actions—*i. e.*, in the specific properties of its toxines, when it does cause disease. From the general systemic effects of the poisons elaborated locally by the diphtheria organism, in which the disastrous digestive properties of its toxines manifest themselves in the heart muscle, kidney cells, etc., we are certainly justified in surmising that the pronounced cardiac symptoms in so many of the cases in the foregoing list were due to analogous direct poisoning of the heart by pneumococcus toxines. Why this organism at one time should spend its activity on the lung and then suddenly subside, and at another act in a very different fashion on other organs, is as little explicable as why it generally does not infect at all though undoubtedly present.

The practical deduction from both clinical and bacteriological observations of the facts of pneumonia emphasize anew the utter futility of treating diseases according to their names. From many clinicians we hear that it is doubtful whether the treatment of pneumonia is any more successful now than it was thirty years ago. This doubt I fully share, but one reason may be that pneumonia is too much regarded as pneumonia and nothing else, instead of being an infectious disease which produces very differing effects in those attacked according to very varying conditions in the infection. Moreover, at the very outset, it is unsatisfactory to treat a case of poisoning by dealing with its effects or symptoms instead of aiming to neutralize the poison itself. On this account our main hope against this formidable affection is from bacteriology. Owing to its normal tendency to be a sharply defined self-limited disease, there is much more probability that a pneumonic antitoxine will be found than in the case of tuberculosis, for the chronicity of the latter does not promise well for any inhibitory product developing with the growth of its bacilli. Since 1891 the brothers Klemperer, Bonome, Foa, Emmerich, Issaef, and others, have proved that the blood serum of rabbits immunized to the pneumococcus possesses the property of protecting other rabbits against this infection, and they have treated cases of pneumonia in the human subject with the serum of immunized rabbits. Washbourn, of Guy's Hospital,* regards this serum as derived from too small animals, and uses a serum instead from an immunized horse, which he has been able to reduce to a definite standard of strength, as in diphtheria antitoxine. He gives reports of two cases admitted to Guy's Hospital, one of them of double pneumonia, which recovered under its use, and subsequently a very severe case in a fat alcoholic subject in which it appeared very effective. Stepney, in the same journal (April 27th), reports a case of left lung pneumonia in a man into whom he injected six hundred and sixty units of Washbourn's antitoxine eleven times during seven days, with no appreciable effects, and the patient died. Kidd, of the London Hospital, reports two cases which recovered, in which Washbourn's antitoxine was used, but he doubts if it had much control over the disease. Time alone will show whether such an antitoxine can be furnished to the profession, as it is from this quarter only that any real improvement in the treatment of pneumonia can be expected.

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* *Zeitschr. f. Hyg.*, 1891, Bd. xi.

† *Jour. Pathol. and Bacteriology*, March, 1897.

* *Brit. Med. Journ.*, February 27, 1897.

Left only to dealing with indications, the treatment of the above-mentioned eleven cases, all of whom recovered, was, first, to lessen the vascular excitement of the early stages—*i. e.*, for the first day or so—by aconite and sweet spirit of nitrous ether. As to high temperature, I do not feel solicitous if it does not rise above 106°, considering the pyrexin rather beneficial than otherwise. Much our chief task, as will be seen by the records, was to deal with threatened heart failure, this danger, in a number of them, continuing for such long periods. Besides peptonized food, our chief medicinal recourse was to a prescription of equal parts of the tinctures of nux vomica, digitalis, and strophanthus, of which twenty-five to thirty drops were given every three hours. Caffeine, with Hoffmann's anodyne, was also used, and the tinctura ferri chloridi. But the most striking effect noted when these failed to act satisfactorily was from doses of seven to ten grains of camphor, given hypodermically, dissolved in sterilized olive oil. In Case VIII it is doubtful if the patient would have been saved without these injections, as his pulse responded to nothing else.

PASTEURIZED MILK

AS DISPENSED IN YONKERS, AND A STUDY OF THE EFFECT ON INFANT MORTALITY.*

By S. E. GETTY, M. D.,
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Digestive troubles among children are so prevalent and fatal during the summer months in our cities that it has become of the utmost importance that the causes should be investigated and determined and a remedy found that would reduce the mortality. It is a problem the solution of which demands our best thoughts and most vigorous action.

We can not pull down the tenement houses and compel the people occupying them to move into the country, nor can we educate these people immediately in the hygienic art of living. If we could say to the milk dealer, You must keep your cows clean and in good health and insure a pure milk only being sold to the public, much might be accomplished, but all this takes years and many workers; meanwhile hundreds and thousands of children's lives are being sacrificed annually. Too much credit can not be given Mr. Nathan Straus for having been the first one to put into practical operation a plan whereby these disadvantages can be overcome, and we wish now to acknowledge the many practical points received from him as well as the original idea, that the use of pasteurized milk is the means easiest adopted and best adapted to overcome the many difficulties that confront us in solving this problem. With the object of reducing infant mortality from digestive troubles in the city of Yonkers, the Sterilized Milk Dispensary of St. John's Riverside Hospital commenced work on July 14, 1894.

The general plan of running the dispensary in 1894 and 1895 was the same as the Nathan Straus depots in New York, a description of which, written by Dr. Roland G. Freeman, has appeared in one of the journals (*Medical Record*, August 4, 1894). The milk during these two years was supplied by local dairymen, but was, on the whole, not thoroughly satisfactory, and we realized early in our work the great desirability and actual necessity of controlling a dairy where every effort would be made to produce pure milk, drawn from healthy and properly fed and groomed cows. Before beginning work for the season of 1896 it was decided to obtain control of a dairy, but what dairy it was a difficult question to decide, as so much of the success of the work depends upon a pure milk at the source of the supply.

A large number of dairies were inspected, and numerous talks with farmers disclosed a surprising amount of ignorance and carelessness on their part, not only in regard to the care of the milk and utensils, but also about the stabling, feeding, and health of cows.

An agreement was finally made with the manager of the Briar Cliff Farm at Whitsons for the supply. The cows selected were a cross between Holsteins and natives, and Guernseys and natives, and they were all given the tuberculin test and found to be free from tuberculosis. The stables were critically examined in regard to light, air space, and drainage, and found to be models of their kind, and were kept in a perfectly hygienic manner. The water used by the cows for drinking purposes, also that used for washing the milk pails and cans, was analyzed and proved satisfactory. The pastures were gone over carefully to detect noxious weeds. The greatest care was taken at milking time to keep the milk free from dust and dirt; before each milking the cows were groomed and the udders thoroughly wiped, and after this duty was performed the milkers washed their hands and put on their milking suits. After being drawn the milk was rapidly cooled, and all care taken to keep it cool and free from contamination until ready for shipment. Only the afternoon's milk was sent to us. The one thing feared was the railroad journey at night of one hour in a refrigerator car, but no ill effects were discovered from it. The train was met on its arrival by the dispensary wagon and, after a short drive, the milk was immediately transferred to a refrigerator. Pasteurization began at 5 A. M., and at that time the milk was thirteen hours old. This coming season pasteurization will commence at 12 midnight, as we have become convinced that the fresher the milk the better the result will be. If this is done the milk will be but eight hours old, and it would better suit our purpose if the milk were only one or two hours old.

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* Read before the Society of Alumni of Bellevue Hospital, June 2, 1897.

An average analysis of the milk received was: Lactometer, 114; fat, 4.6; proteids, 3.17; sugar, 4.87; ash, 0.60; total solids, 13.24. Bacteria, 15,400 to 1 c. c. when seventeen hours old. Leeds gives an average analysis of good bottled milk: Fat, 3.75; proteids, 3.76; sugar, 4.42; ash, 0.68; total solids, 12.61.

(In 1892, Sedgwick and Batchelder examined a large number of specimens of milk obtained in Boston and vicinity, for the purpose of determining the number of bacteria present. The average of fifteen samples taken from the tables of persons living in the suburbs of Boston was 69,143 bacteria to 1 c. c. The average of fifty-seven samples of Boston milk obtained directly from the milk wagons and plated at once was 2,355,500 bacteria to 1 c. c. The average of sixteen samples from groceries in the city of Boston was 4,577,000 bacteria to 1 c. c. Professor Renk found in the milk supply of Halle from 6,000,000 to 30,000,000 bacteria to 1 c. c.)

Three samples of milk obtained in Yonkers showed respectively 1,500,000 bacteria to 1 c. c., 6,000,000 bacteria, and 10,150,000 bacteria to the cubic centimetre. It will be seen from the foregoing that the milk received compared most favorably not only in solids, but in the extremely small number of bacteria, with recognized standards.

A feature of work begun in 1896 was the supplying at moderate rates on physician's prescriptions of percentage milk to the children of the well-to-do. The number of children fed in this manner averaged thirty during the four months the dispensary was open. These prescriptions varied according to the requirements of the child fed, or the judgment of the attending physician. This branch of our work was begun in order that the income would be increased to some extent, also to give the physicians and their patients an opportunity to utilize the facilities of the laboratory. That they appreciated the work of the dispensary is evidenced by the fact that there was no diminution in the number of private orders until the dispensary was closed for the season, and many regrets were expressed both by physicians and patients that the work was not to be continued throughout the year.

For the poor the following formulas are used:

1. Pure milk pasteurized in eight-ounce bottles, at two cents each.
2. Milk and limewater pasteurized in six-ounce bottles, at one cent each, to give fat, 2.3; proteids, 1.68; sugar, 7; neutral or alkaline.
3. Milk and barley water, in equal parts, pasteurized in six-ounce bottles, at one cent each.
4. Plain barley water sterilized in six-ounce bottles, at one cent each.

Arrangements were made with the owners of five drug stores conveniently located near the centres of population by which they took charge of selling the milk without any cost to the dispensary except the ice necessary to keep the milk cool. A deposit of three cents was required on each bottle to insure its return. This plan has worked well, especially for the poor, as they have been enabled to obtain the milk at any hour of the day or night. The unsold milk was returned the following morning and sent to the hospital, and used for cooking purposes.

The reasons why Yonkers was selected to try the experiment were:

1. It is a city of only forty thousand inhabitants, with a large tenement population composed of people of many nationalities—Hungarians, Irish, Russian Jews, and Italians—all ignorant of the first rudiments in the proper care and feeding of infants.

2. In a small community a larger number of bottles could be dispensed *per capita* than in a large city like New York, and the effects would be more far-reaching and evident.

In the four summer months of 1895 64,000 six and eight-ounce bottles were dispensed in Yonkers, while in New York there were 536,000 bottles dispensed from the Nathan Strauss milk depots. If the proportion sold in New York to the population had equaled that sold in Yonkers the sales would have been 3,400,000 bottles in a like period of four months, the amount dispensed in Yonkers being seven times as much as in New York in proportion to population. The sales in Yonkers for the season of 1896 were increased to 78,300 bottles. If the same ratio had prevailed in New York, the sales would have reached the enormous total of 4,000,000 bottles in four months.

3. Owing to the limited size of the town, the effects could be closely observed and the individual cases carefully studied.

Having given a brief outline of the methods employed in the dispensary, and having stated the reasons for starting the work, it is now in order to analyze all conditions which might in any way affect the result sought to be obtained in the reduction of infant mortality from digestive troubles.

On June 1, 1896, it is estimated that there were living in Yonkers 800 children under one year, 750 children between one and two years, and 2,200 children between two and five years—total, 3,750 children under five years of age.

Granting seventy-five per cent. of the children under one year were nursed by their mothers (a high average), this would leave 200 children under one year to be fed artificially, and to this number must be added most of the children between one and two years, say 700, a total of 900 children under two years of age of all classes to be provided with some kind of artificial food.

From an analysis of some thousands of birth certificates we find that sixteen per cent. of the births recorded were in single houses, twenty-four per cent. in flats, and sixty per cent. in tenements. Of the 900 children in Yonkers under two years artificially fed, there are 540 living in the tenements.

The children fed on dispensary pasteurized milk in 1896, allowing six bottles to each child daily, was June, 45; July, 121; August, 150, and September, 111. At a first glance this seems a small proportion of the total to feed, but it must be remembered that, while most of the children living in single houses and small flats received food carefully prepared at home, probably fifty per cent. of the tenement children were fed on dispensary milk at some time during the summer.

An increase of thirty-three per cent. and a third in the sales of milk and limewater from 1895 indicates that a larger number of young children were fed on this milk. Sales of milk and barley water decreased considerably, indicating that the children we were feeding kept well on either the pure milk or milk and limewater.

Sales of pure milk decreased slightly from the previous season. This is accounted for by the fact that the price was raised from five cents to eight cents a quart. In 1895 it was suspected that some of this milk was used for family purposes; probably very little was so used in 1896.

In order to compare the conditions as they existed in Yonkers before the dispensary was established with the conditions as we find them to-day, after three years of pasteurized milk, I present the following suggestive figures obtained from the official records:

The total number of births reported from January 1, 1891, to January 1, 1896, a period of five years, was 5,009. This does not include any estimate of the children born elsewhere, who moved into Yonkers during this period, nor has any allowance been made for those who moved away during this period. The chances are that the former exceeded the latter to some extent; it will have, however, little bearing on the general result. The number of children under one year who died during the same period was 1,010, showing a mortality of twenty per cent. the first year. The number who died between one and five years of age was 526, making a total of 1,536 deaths in children under five, or nearly one third of the number born, a much higher percentage than that given by Ashbey and Wright of twenty-five per cent.; of this number, 518 died from digestive troubles, or more than thirty-three per cent. of the total deaths from all causes among children under five; 433 died during the months of June, July, August, and September from the same causes, or eighty per cent. of the entire number of deaths from digestive troubles. Forty-five of the children dying from digestive troubles lived in houses containing but one family, 29 lived in small flats, and 444 lived in tenements, showing that eighty-five per cent. of the total deaths from digestive troubles occurred in the tenements. The preponderance of deaths in tenements and in the summer months is alarming, and shows something radically wrong. Poverty and ignorance were the apparent causes suggested by location, and heat by the time of mortality. As to this latter cause there is room for argument, as I shall show later on. The deaths from digestive troubles among children in Yonkers for June, July, August, and September, 1896, numbered 48, and a tabulation of these deaths was made to learn the kind of food the child received prior to death. There were some other interesting facts brought out by this tabulation, a summary of which I will give you:

Residence: One lived in house containing one family, 2 lived in small flats, 45 lived in tenements—total, 48.

Age: Twenty-four under six months, 16 six months to one year, 6 one year to two years, 2 over two years—total, 48.

Food: Ten breast fed, 2 breast and bottle fed, 34 bottle fed, 2 unknown, probably bottle fed—total, 48.

Of the 48 children, 9 only had pasteurized milk at any time during the summer; six of the children were not put on the milk until they were taken sick, and the length of time they received the milk varied from two to four days.

Two children were given the milk for a while, and later on other food was given until death. One short-term child (eight months) was apparently thriving on the milk when it developed meningitis and died. The physician in attendance says that the milk had nothing to do with the child's death.

From this analysis of the deaths it will be seen that not a single child died in Yonkers that was put on pasteurized milk when it was in good health, and from the evidence of both physicians and the mothers the children kept well on the milk. There are no means by which we can estimate the number of sick children who were cured by this milk; we can only tell of the failures by examining the death certificates.

Much misconception exists among physicians as to just what pasteurized milk is intended to do. When it is given to a healthy child, with a little manipulation by changing the proportions of the various solids in the milk to suit the requirements of the child, a food will be obtained which will agree with it perfectly. On the other hand, if a child has been fed on some other food and is suffering from infection produced by it, it is the height of folly to give milk of any description to it until we have first cleaned out the entire digestive tract, and have allowed time enough to elapse for the destruction of the harmful bacteria contained in it. The most sterile milk would become infected if we gave it before taking these precautions—it would simply be adding fuel to the fire. To tide the child over this period of a few hours, or perhaps a day, a sterilized barley water was prepared fresh every day and kept in the stores constantly. From a personal experience in several cases I found it very useful and strongly recommend it.

The relation of temperature and humidity to digestive troubles has been carefully studied, and a number of tables has been made, with as yet no positive results. The investigations will be further carried on and reported at another time. It is enough to say now that it has been proved that eighty-five per cent. of the children dying from digestive troubles live in tenements. Let us for a moment consider the conditions under which these children are reared, especially those brought up on the bottle. As a rule, whenever a child cries it is the signal for the mother to feed it, as she imagines the child is hungry, when it is crying because of a stomach ache; then the amount given at one feeding is often twice the amount that is necessary. As a result of these errors there is a catarrhal condition of the mucous membrane, and the child is in a condition to be unfavorably affected by any infected food. If the child is fed on milk, it has come in nine cases out of ten from the corner grocery, and the milk is from twenty-four to forty-eight hours old, and has been standing in the heated store exposed to contamination and dust of all kinds, and then the mother keeps it in an unclean vessel, and by the time the poor baby receives it the milk is swarming with germs, and instead of being a food acts as a poison, just as much so as arsenic or strychnine.

Another class of babies are partly nursed and fed from the table, and the most indigestible and harmful things are given to them.

Very few babies who are nursed from the breast entirely suffer from cholera infantum.

These causes are more potent in causing digestive troubles among children than the direct effect of heat and humidity. Indirectly, heat and humidity have a decided effect by influencing the milk supply. Heat and moisture favor the growth of bacteria, and milk is a most fertile culture medium.

There were no special reasons why the temperature and humidity should have affected the death-rate during the season of 1896 more than in other years.

If our reasoning was correct, the large number of children fed on dispensary milk in Yonkers should be productive of a decrease in the death-rate from digestive troubles. Let us see just what has occurred in Yonkers, from a study of the death statistics. The average number of deaths of children under five in the months of June, July, August, September, in the years 1892,1893,1894, and 1895, was 162. In the same period in 1896 the number was 135, a decrease of 27 deaths, or seventeen per cent. The average number of deaths for the four years from digestive troubles was 91, while in 1896 the number was only 48, a decrease of 43 deaths, or forty-seven per cent. The increase of population in Yonkers from 1880 to 1890 was seventy per cent., and there is every reason to believe that the same ratio has been maintained since 1890; for in 1890 and 1891 the average attendance in the public schools was 2,376, in 1895 and 1896 the average attendance was 3,476, an increase in five years of 1,100, or forty-six per cent. The other causes of death among children show an increase of 16, or thirty-seven per cent. The number of deaths among persons over five shows an increase of 26, or twenty-two per cent. These increased percentages would be somewhere near the increase of population in five years. This is a wonderful record for Yonkers—a saving of 43 lives in the short space of four months in a town of only 40,000 people.

I might add that there was no material change in either the hygienic conditions or the milk supply in Yonkers during the summer of 1896 from that of previous summers.

Death Statistics for Months of June, July, August, and September.

YEARS.	HOBOKEN, N. J. POPULATION, 55,000.						LONG ISLAND CITY. POPULATION, 40,000.						NEWBURGH. POPULATION, 26,000.						YONKERS. POPULATION, 38,000.					
	Total deaths.	Over five.	Under five.	Digestive troubles.	Marasmus.	Others.	Total deaths.	Over five.	Under five.	Digestive troubles.	Marasmus.	Others.	Total deaths.	Over five.	Under five.	Digestive troubles.	Marasmus.	Others.	Total deaths.	Over five.	Under five.	Digestive troubles.	Marasmus.	Others.
1892..........	501	224	277	107	63	107	360	152	208	89	38	103	193	122	71	35	14	18	302	124	178	113	24	41
1893..........	477	172	305	92	66	147	436	184	252	86	45	114	197	115	82	30	28	20	256	127	129	82	20	27
1894..........	444	151	293	117	54	122	353	134	219	87	40	92	177	110	67	23	28	16	303	119	184	98	33	54
1895..........	497	215	282	99	57	126	394	173	221	98	38	85	174	96	78	30	25	23	255	97	158	70	35	50
Average, 4 yrs.	480	191	289	104	60	126	386	158	225	90	40	99	185	111	75	30	24	19	279	117	162	91	28	43
1896..........	608	256	352	110	72	170	441	184	257	115	43	99	188	116	72	43	12	16	278	143	135	48	27	60
Present increase or *decrease*...	...	...	22	6	..	...	...	...	14	28	..	...	...	...	*4*	40	..	..	...	...	*17*	*47*	..	..

It would be inconclusive to judge of the result from the death-rate in Yonkers only, so the death statistics of the neighboring cities of Hoboken, Long Island City, and Newburgh have been tabulated. These cities were chosen for comparison because they would be similarly affected by any climatic influences, also because they are nearly of one size. Both Hoboken and Long Island City are slightly larger than Yonkers, and the location of Long Island City is not so good, and the proportion of people living in tenements is larger than in either Yonkers or Hoboken. The milk supply of all three cities comes from two sources—the one from the neighboring farms, the other by railroad from some distance. Very little of the milk supplied is but twelve hours old, and a large proportion thirty-six hours old, and some older. Newburgh is smaller than Yonkers, with a much smaller tenement population, and those living in the tenements are of a higher order of intelligence. The location of the town is excellent, with natural drainage toward the river. The milk supply is good, Newburgh being the largest town in a noted dairy county; the milk is brought in fresh twice a day in farmers' wagons. I have been told by a physician living there that the milk is only twelve hours old when it is delivered to the consumer. In none of these cities —Hoboken, Long Island City, or Newburgh—is there a pasteurized milk dispensary.

The following is a summary of the tabulation:

Hoboken.—The average number of deaths among children under five for the four summer months of the years 1892, 1893, 1894, and 1895 was 289. In the same period in 1896 the number reached 352, an increase of twenty-two per cent. The number of children dying from digestive troubles averaged 104; in 1896 the number was 110, an increase of 6, or six per cent.

Long Island City for the same period shows an average of 225 deaths among children under five; in 1896 the number was 257, an increase of 32, or fourteen per cent. The deaths from digestive troubles averaged 90, while in 1896 they reached 115, an increase of 25, or twenty-eight per cent.

Newburgh for the same period shows an average of 75 deaths among children under five; in 1896 the number was 72, a decrease of 3, or four per cent. The deaths from digestive troubles averaged thirty; in 1896 they numbered 43, an increase of 13, or forty-three per cent.

In these three cities the average number of deaths among children was 589, while in 1896 the number was 681, an increase of 92 deaths, or fifteen per cent. The deaths from digestive troubles averaged 224; in 1896 the number reached was 268, an increase of 44 deaths, or twenty per cent. This increase of twenty per cent. is just about the normal augmentation caused by the growth of the cities, while in Yonkers, with a rapidly expanding population, there is a decrease of seventeen per cent. in deaths among children, and a decrease of forty-seven per cent. from digestive troubles among children; the other causes of death among children increased thirty-seven per cent. There is no need for further argument—these figures speak for themselves.

In conclusion, a summary of the evidence in regard to Yonkers shows:

1. That bottle-fed children under one year of age and living in tenements are by a vast majority the subjects of fatal digestive troubles in the summer months.

2. That temperature and humidity extremes exert but slight direct influence in causing digestive troubles, but indirectly, by favoring the growth of bacteria in the milk supply, a very great influence.

3. That pasteurized milk is not curative of itself, if the child has been suffering from infection due to impure milk.

4. That pasteurized milk, if used intelligently as directed among a large number of healthy children, will reduce the mortality of a community to a marked extent, regardless of all adverse hygienic and climatic conditions.

5. That the extraordinary reduction of deaths from digestive troubles in Yonkers was not mere chance, but the direct result of well-conceived efforts in behalf of the children living in the tenements.

We do not take any credit to ourselves for having discovered anything new, but have merely put into practice certain well-known principles, with what measure of success you have learned. If the death-rate in Yonkers can be lowered by the adoption of these principles, it can be done in any other town, and in view of the good accomplished in Yonkers, I urge upon the profession generally the establishment of pasteurized milk laboratories in all centres of population, where the poor may obtain pure milk properly proportioned, and at a price within their means. To the physician it offers one of the surest and simplest means of keeping young children in good health during the summer months, and to the poor its advantages are so manifest that nothing need be said in its favor.

It is not maintained that pasteurized milk is a panacea for the digestive troubles of infants, but in a majority of cases it will carry them through the heated months and will be the means of saving countless lives.

The conditions existing to-day make the subject of infant feeding a most important one. The number of mothers who are either unable or unwilling to nurse their children is increasing; the growing tendency toward congestion of population, with its attendant evil, the overcrowded tenement house, the poverty and ignorance among the occupants of these houses, and the impure quality and over-quantity of food given the babies at irregular intervals; the distance milk is brought by the railroads, and its consequent agitation added to the time required in transit, all aid in the growth of bacteria. Knowing all this, it is astonishing

	Age.	Date of death.	Max. temp. on day of death.	Max. humidity on day of death.	Abode.	Diagnosis.	How long sick.	Remarks.
1	$1\frac{2}{12}$ yr.	June 9	78°	95	Tenement.	Enteritis.	4 days.	Breast-fed.
2	$\frac{8}{12}$ "	" 13	69	89	"	Acute indigestion.	5 "	Bottle-fed. Milk. Was seen by physician in moribund condition six hours previous to death.
3	$\frac{1}{12}$ "	" 21	85	92	"	Gastro-enteritis.	6 "	Breast-fed.
4	$\frac{6}{12}$ "	" 22	87	87	"	Cholera infantum.	1 day.	Bottle-fed. Milk.
5	$\frac{10}{12}$ "	" 22	87	87	"	Gastro-enteritis.	3 days.	Bottle-fed. Milk until taken sick, then sterilized milk.
6	$\frac{4}{12}$ "	" 25	63	100	"	Gastritis.	4 "	Breast-fed.
7	$\frac{6}{12}$ "	" 26	77	100	"	Cholera infantum.	4 "	Bottle-fed. Milk. Child neglected by parents.
8	$1\frac{11}{12}$ "	" 27	79	60	"	Acute enteritis.	5 "	Bottle-fed. Milk and from table.
9	$\frac{4}{12}$ "	July 3	84	98	"	Acute gastro-enteritis.	4 "	Breast-fed.
10	$1\frac{9}{12}$ "	" 5	81	95	"	Enteritis.	3 "	Milk and from table. Moribund when seen by physician.
11	$\frac{2}{12}$ "	" 5	81	95	"	Cholera infantum.	5 "	Breast-fed until taken sick, then sterilized milk for two or three days.
12	$\frac{9}{12}$ "	" 6	78	95	"	Cholera infantum.	3 "	Breast-fed and condensed milk until taken sick, then sterilized milk.
13	$\frac{3}{12}$ "	" 9	76	100	"	Cholera infantum.	5 "	Artificially fed. Milk.
14	$\frac{5}{12}$ "	" 11	86	93	"	Cholera infantum.	3 "	Bottle-fed. Goat's milk.
15	$\frac{8}{12}$ "	" 13	87	79	"	Acute gastro-enteritis.	7 "	Bottle-fed. Condensed milk.
16	$1\frac{8}{12}$ "	" 14	85	86	"	Gastro-enteritis.	6 "	Bottle-fed. Milk and from table.
17	$\frac{7}{12}$ "	" 14	85	86	"	Cholera infantum.	3 "	Breast-fed.
18	$\frac{6}{12}$ "	" 14	85	86	"	Gastro-enteritis.	10 "	Bottle-fed. Milk.
19	$\frac{11}{12}$ "	" 14	85	86	"	Cholera infantum.	3 "	Breast-fed.
20	$2\frac{2}{11}$ "	" 14	85	86	"	Cholera infantum.	2 mos.	Bottle-fed. Malted milk until child was much worse, then sterilized milk.
21	$\frac{3}{12}$ "	" 14	85	86	"	Gastro enteritis.	2 days.	Bottle-fed. Milk. Neglected by parents.
22	$\frac{4}{12}$ "	" 14	85	86	"	Enteritis convulsion.	5 "	Breast-fed.
23	$\frac{3}{12}$ "	" 15	83	90	"	Cholera infantum.	5 "	Bottle-fed. Milk.
24	$\frac{5}{12}$ "	" 16	77	86	"	Cholera infantum.	1 day.	Bottle-fed. Milk. "Marasmus."
25	$\frac{5}{12}$ "	" 17	75	76	"	Gastro-enteritis.	5 days.	Bottle-fed. Sterilized milk for two or three days.
26	$\frac{8}{12}$ "	" 17	75	76	"	Acute gastro enteritis.	3 "	Bottle-fed. Condensed milk.
27	$\frac{7}{12}$ "	" 17	75	76	"	Summer complaint.	4 wks.	Bottle fed. Milk and from table.
28	$\frac{5}{12}$ "	" 19	73	90	"	Acute gastro-enteritis.	2 days.	Bottle-fed. Milk.
29	$\frac{2}{12}$ "	" 20	82	92	"	Cholera infantum.	8 "	Bottle-fed. Condensed milk. Baby came from New York city in moribund condition.
30	$1\frac{1}{12}$ "	" 25	76	84	Flat.	Acute gastro-enteritis.	2 "	Breast-fed.
31	$\frac{8}{12}$ "	" 28	89	93	Tenement.	Cholera infantum.	7 "	Bottle-fed. Milk and from table.
32	$\frac{6}{12}$ "	" 30	88	87	"	Gastro-enteritis.	6 "	Bottle-fed. Milk.
33	$\frac{8}{12}$ "	" 31	78	72	Residence.	Diarrhœa.	2 mos.	Bottle-fed. This was an eight-months child, and was fed on malted milk, then on pasteurized milk. Death was from meningitis.
34	$\frac{8}{12}$ "	Aug. 1	71	83	Tenement.	Cholera infantum.	8 days.	Bottle-fed. Milk and from table.
35	$1\frac{2}{12}$ "	" 2	80	93	"	Cholera infantum.	2 wks.	Bottle-fed. Milk.
36	$\frac{3}{12}$ "	" 5	89	80	"	Cholera infantum.	5 days.	Bottle fed. Condensed milk.
37	$\frac{4}{12}$ "	" 5	89	80	"	Chronic diarrhœa.	3 "	Bottle-fed. Cow's milk. Pasteurized milk when taken sick.
38	$\frac{3}{12}$ "	" 5	89	80	"	Cholera infantum.	2 wks.	Bottle-fed. Milk.
39	$\frac{3}{12}$ "	" 7	91	93	"	Cholera infantum.	5 days.	Breast-fed.
40	2 "	" 18	73	93	"	Cholera infantum.	5 "	Bottle-fed. Milk and from table. Moribund when seen by physician.
41	$\frac{3}{12}$ "	Sept. 7	74	75	"	Gastro-enteritis.	14 "	Bottle-fed. Malted milk. Pasteurized milk. Was doing well. Four weeks later physician was called, and he does not know the kind of food child had in the interval.
42	$\frac{1}{12}$ "	" 10	86	73	"	Gastro-enteritis.	2 "	Breast-fed.
43	$1\frac{2}{12}$ "	" 10	86	73	"	Gastro-enteritis.	1 day.	Breast-fed.
44	$\frac{11}{12}$ "	" 10	86	73	"	Gastro-enteritis.	4 days.	Bottle-fed. Milk.
45	$\frac{2}{12}$ "	" 12	78	90	"	Meningitis, diarrhœa.	2 wks.	Bottle-fed. Pasteurized milk for a while, then condensed milk.
46	$\frac{3}{12}$ "	" 16	74	78	Flat.	Gastro-enteritis.	8 days.	Breast-fed.
47	$1\frac{10}{12}$ "	" 21	65	83	Tenement.	Enteritis.	14 "	Bottle-fed. Milk. "Marasmus."
48	$\frac{3}{12}$ "	" 30	72	82	"	Cholera infantum.	6 "	Bottle-fed. Condensed milk.

that there are not more deaths among the tenement children. Yet most of these deaths can be prevented.

To those who may be thinking of establishing a laboratory, some figures showing the cost of the plant and the operating expenses will be of interest.

Estimated cost of plant for pasteurizing 1,200 bottles daily, $1,000. The actual net deficiencies have been: 1894, $704; 1895, $1,034; 1896, $1,025.

Any details in regard to plant and methods employed will be cheerfully given, and a cordial invitation is extended to those interested to inspect the plant.

In closing, I desire to state that this work in Yonkers has been made possible through the action of one man, who has not only given his time and thought from a busy career, but has also given the plant and has paid all the expenses of its operation. Would that there were more men like him.

57 Ashburton Avenue.

The American Laryngological, Rhinological, and Otological Society will hold its fourth annual meeting in Pittsburgh on the 11th and 12th of May, 1898, under the presidency of Dr. William H. Daly.

The Medical School of Syracuse University.—We learn that this school opens this year with greatly increased facilities for teaching, including an enlarged faculty, and that its patronage also is growing.

THE DIPLOCOCCI SEBORRHŒÆ.

By WILLIAM HUTCHINSON MERRILL, M. D.,
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THE idea that seborrhoic eczema is a disease caused by a specific germ is not a new one.

For more than twenty years attempts have been made at varying intervals to isolate it, and occasionally an incomplete series of experiments would point toward the possibility of some organism present in the disease having definite pathogenic power.

Malassez, in 1874, using scales taken from seborrhœa spots, isolated several varieties of bacteria.

1. Large button-shaped "spores," from two to five micromillimetres in size, with a double outline, usually with contents, sometimes without.

2. Small forms, mostly oblong or oval, two to three micromillimetres in size, without projections.

3. Gray, granular, strongly refracting spots, which he judged to be of parasitic origin or nature.

Bizzozero, in 1884, examined three varieties, staining them with methyl blue.

1. A form with double contour, four micromillimetres in size, at times with projections, and staining unequally. The inequality of the coloring, he thought, might be due to the varying thickness of the cell wall. He called these *Saccharomyces sphœricus.*

2. Smaller oval forms, two micromillimetres in size, generally with projections, less easily stained, and with no pale places. He called these *Saccharomyces ovalis.*

3. Micrococci.

A little later Boeck corroborated Bizzozero's findings.

In 1885 Pekelharing described the *Saccharomyces sphœricus* of Bizzozero, and in young cultures found so-called transition forms from which he judged that Bizzozero's species were similar, and proposed the name *Saccharomyces capillitii.*

In 1890 Unna found the same germs as previous experimenters—finding them both in scalp scales and in comedones. His own cultures were made from comedones. He concluded that young cultures contained only swollen bacilli, or those having a tendency to swell, while the old cultures showed the round and oval forms. He called them bottle bacilli (Flasche), and regarded them as identical with Malassez varieties.

In 1891 Unna found these spores of Malassez in swarms in pityriasis. Again, in 1894, he found bunches of cocci to which he gave the name morococci.

These morococci he found on the hairy scalp and also on the skin over the whole body. After inoculating dogs with these germs he observed a reddening of the skin and a falling out of the hair at the spots inoculated, but did not get the same results when using pure cultures of the "bottle bacillus." The morococci appeared at times as diplococci or as tetracocci of large size, which he called *Riesenkokken.* Finally, the pure cultures showed as follows:

In agar: gray white, sharply limited bands and transparent dots.

Gelatin was only slowly and incompletely liquefied on the surface.

On potato the growth appeared flat, gray white, and limited.

In 1896 Van Hoorn found the saccharomyces and bottle bacilli of former investigators and explained their characteristics more fully.

Sabouraud, in an article published this year, has found a microbacillus which he claims to be a constant microbial expression and the cause of seborrhœa. This microbacillus resembles a coccus, being one micromillimetre by half a micromillimetre in size. It is immovable and without spores.

The author in 1895 reported the results obtained from the bacteriological examination of fifty cases, and again in 1896 reported nineteen cases more. In these sixty-nine cases the following germs were found:

(*a*) *Staphylococcus pyogenes aureus et albus.* These pus cocci were found quite plentifully in scales coming from patients living in New York, but only seldom or not at all in scales coming from patients living in the country.

(*b*) A bacillus of irregular size, long and short, flexible and intertwined, moving with a wavy, sinuous motion. These bacilli form large, round, white colonies, with smooth convex surfaces. They are non-liquefying.

(*c*) A bacillus from an oval to two or three times as long as broad, non-motile, growing in brownish, round, raised colonies, with smooth and glistening surfaces, and liquefying the gelatin until the colonies float in pits filled with liquid. These two varieties were only found three times.

(*d*) The chromogenic *Bacillus fluorescens liquefaciens minutissimus.* Found twice.

(*e*) A bacillus, single, in pairs, or chains, with rounded ends, motile, liquefying, aerobic and anaerobic, and non-chromogenic. Forming on agar a white colony with indented borders and without lustre. This bacillus was found thirty-four times. In one case alone in pure culture. In addition to these bacilli, six varieties of diplococci were found alone or in combination. As these are described in full in the preceding article, only their chief characteristics will be given here.

(*f*) A diplococcus forming gray, translucent, tough colonies, non-liquefying, non-chromogenic, and oval in form. Found in one case.

(*g*) A diplococcus forming round, light-brown colonies, growing darker toward the centre. They are non-liquefying and non-chromogenic. Each element is round. Found in two cases.

(*h*) *Diplococcus citreus liquefaciens.* Found in five cases.

(*i*) A diplococcus forming small, round, lemon-yellow colonies, liquefying and chromogenic. Differing from the preceding in that both the color and liquefaction begins immediately after the growth starts. Found in two cases.

(*k*) A diplococcus forming clear white colonies with slightly irregular borders. Is aerobic by preference, non-liquefying, and non-chromogenic. Each element is round and of medium size. Found in sixty-two cases.

(*l*) A diplococcus forming round golden-yellow colonies. Aerobic by preference, chromogenic and non-liquefying. The elements are more oval than in the preceding form. Found in forty-seven cases.

To these sixty-nine cases are now added thirteen more—the scales being taken in seven cases from the scalp, and in six cases from the chest.

In all there were four varieties of bacteria found as follows:

(*m*) A short bacillus with square ends, single or in chains, motile and liquefying. Found in two cases in which scales were taken from the scalp.

(*n*) A diplococcus forming whitish colonies of irregular size, and borders liquefying the gelatin as they spread, and leaving a whitish flocculent mass floating in the liquid. Found in four scalp cases and two chest cases.

The "white" diplococcus described in division *k* was found in six cases—three from the scalp and three from the chest—while the "yellow" diplococcus described in division *l* was found in two cases, both from the chest.

In these last thirteen cases inoculations have been attempted nine times with the following results:

CASE I.—(*a*) After washing the chest in soap and water the part to be used was bathed in alcohol and allowed to dry. One or two hairs were pulled out, and with a sterile knife a vaccination mark was made. Into this a portion of a colony of the "white" diplococcus was rubbed (variety *k*) by means of a sterilized platinum loop. The result was negative.

(*b*) With the same precautions the liquefying diplococcus (variety *n*) was inoculated. The result was negative.

CASE II.—After similar preparations the white diplococcus (variety *k*) was used again. On the fifth day a small scalp spot appeared which gradually spread until its diameter was perhaps one fifth of an inch. In appearance it exactly resembled a spot of seborrhœa. A scale taken from this spot and placed in a gelatin culture tube developed the same diplococcus. The spot disappeared under the use of the remedies ordinarily used in seborrhœa.

CASE III.—The liquefying diplococcus, or variety *n*, was inoculated in this case. The result was negative.

CASE IV.—The inoculation in this case was made with the yellow diplococcus, or variety *l*. A spot began to show on the fifth day surrounding a hair on the chest. This spot at the end of ten days was very typical. The scales were soapy and friable and the edges of the spot slightly reddened. The same diplococcus was cultivated from these scales.

CASE V.—The same diplococcus used as in the preceding case. The spot that followed, although quite small, still resembled closely a spot of the disease itself. The diplococcus, however, could not be developed from the scales.

CASE VI.—The chest was inoculated in four places—once with the yellow diplococcus (variety *l*) and three times with the liquefying diplococcus, or variety *n*. Each attempt failed.

These nine attempts gave six failures and three successes.

In the three series of cases twenty-eight inoculations have been made. Of these, fourteen have given results either typical or nearly so. From these fourteen cases the original diplococcus was redeveloped in eleven.

While to Malassez undoubtedly belongs the credit of having first attempted an organized search after the causative germ of seborrhoic eczema, still his results were not at all conclusive, and most of the investigators since his time have labored to prove the correctness of his conclusions—that is, to prove the presence, more or less frequently, of Malassez germs in the scales of seborrhœa, and to explain their changes of form due to age and environment. But more than the mere presence of germs is necessary. Although very constantly present, they may still lack any pathogenic power, and until Unna isolated and inoculated his "morococcus" we had no proof that the presence of any germ previously found in the scales was more than accidental. The partial success that Unna obtained from his inoculations in dogs was continued by inoculations upon his assistant and himself. From these came certain signs of inflammation, and from the scales of this "artificial eczema" he obtained an unknown diplococcus.

This work of Unna's and the cases reported in this article and the two preceding seem to point conclusively to the fact that diplococci are the specific cause of the disease. Sabouraud's claim that his microbacillus is the cause must at present be set aside, owing to the lack of definite inoculation experiments.

In the eighty-two cases reported in the three articles, diplococci were present almost invariably, at times in company with other forms, but often alone. The inoculations in which the diplococci were used that have been called the white diplococcus and the yellow diplococcus at times resulted in spots that were extremely typical. The development of germs, from scales taken from these spots, alike in every respect to the original germ used in the inoculation, completed the circle; while the action of the spots themselves when treated with lotions ordinarily used in seborrhœa strengthened the proof.

The necessary requirements, then, that must be fulfilled before a germ can be called a specific cause have in these experiments now been finished. The two varieties of diplococci, "the white" and "the yellow," have been found quite constantly present. They have been isolated and cultivated in pure cultures, their actions in various media noted, and their morphology studied. They have with the greatest care possible been inoculated on the surface of the scalp and chest. At the inoculation points spots have appeared resembling in every way the disease itself, and from the scales obtained from these spots the same varieties of diplococci have been again developed.

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POST-TYPHOID PERIOSTITIS.*

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PERIOSTITIS, as a sequel of typhoid fever, while said to be not particularly uncommon, finds very little place in the text-books on internal medicine, and to the physician meeting with such cases there is very little satisfaction in the care and management of patients thus affected to be found even in the latest works on surgery. At least this has been my experience. The two following cases have occurred under my observation:

CASE I.—Mrs. P., aged thirty years; married; the mother of one child six years old; had enjoyed good health always, with the exception of a dysmenorrhœa. She was taken ill December 6, 1893, with typhoid fever, which ran a very severe course, terminating favorably about the middle of the following February. The only complication of any note was a moderately severe phlebitis, involving the left femoral vein, which entirely subsided. April 15th, having been up and about the room for two weeks, there was noticed a decided lameness of the right leg, soon leading to the discovery of tenderness over the right tibia. In a week there was so much pain that she could scarcely bear any weight on the leg. April 21st my attention was called to the case. At about the middle of the anterior surface of the right tibia, to the inner side of the crest, was a prominence five centimetres long by two wide, which was very hard, and exquisitely tender. The pain was quite severe and continuous. There was increased heat and some redness about the parts. The patient was placed in bed with the foot elevated, and the tincture of iodine applied daily for three days. No relief whatever ensued, and on April 24th, under chloroform anæsthesia, a free incision was made the length of the swelling, through the periosteum to the bone. A slight amount of serous exudate appeared, but the periosteum was still adherent. The wound was thoroughly irrigated with a bichloride solution (1 to 4,000), and an iodoform dressing applied. In a few hours complete relief from pain followed. The wound was dressed daily, and healed in about ten days without further trouble.

CASE II.—Mr. H., thirty-eight years of age; married; clerk by occupation; family history unimportant, excepting that one brother died of acute pneumonic phthisis. In November, 1895, he had a mild attack of typhoid fever, running about eighteen days, which was followed in a week after convalescence by a relapse of great severity, attended by maniacal delirium, profuse intestinal hæmorrhages, high fever, and albuminuria. The course of the fever extended from December 23d to February 3d. The temperature did not entirely reach the normal. At the latter date he began to have intense flying pains through both legs, with tenderness along the nerves; was exceedingly restless, sleepless, and hysterical. This state continued for about two weeks, during which time a diagnosis of multiple neuritis was tentatively made, when there commenced to develop local swellings, attended by more continuous pain, and clearly defined areas of tenderness. At this time a tendency to the accumulation of fæces in the rectum, in spite of daily evacuations, occurred, necessitating the removal of large quantities of fæcal matter by means of the finger on two or three separate occasions. By March 22d the conditions were as follows: The patient was considerably emaciated; temperature, 99.5° to 100.5° F.; pulse about 100. Appetite fair, nights restless. At the junction of the last costal cartilage and the right side of the sternum was a hard round swelling, twelve centimetres in diameter, tender on pressure, and the seat of considerable pain. The anterior surfaces of both femora were the seat of similar swellings, that of the right being much the more prominent and more tender; they were in corresponding locations, extending from a little above the patella to the middle transverse line of the femur, and laterally occupying the whole anterior surface. Over the right tibia, just below the insertion of the patellar tendon, was another prominence, presenting the same characters as to tenderness on pressure, hardness, and local heat. This occupied an area two centimetres wide by six in length. Over the left tibial anterior surface, at the junction of the middle and lower thirds, was still another prominence of the size of a half filbert, presenting similar characteristics. The patient had been on a varied tonic course, with iodides in increasing doses. Guaiacol was given internally and applied externally. Locally, ice or heat was also used, according to the relief from pain obtained. April 1st, slight fluctuation was noticed on the costo-sternal swelling, when a free incision was made, giving exit to a small amount of thin, sero-purulent fluid. A probe readily passed down to the cartilage. The wound was thoroughly cleansed with a three-per-cent. pyrozone solution, and irrigated with bichloride (1 to 2,000), when an iodoform dressing was applied. Relief to pain in this region occurred, the discharge increased in amount, became more purulent, the swelling decreased, and in six weeks the opening closed, leaving only a slight indentation. A bacteriological examination of the discharge a few days after the operation, by Dr. Gifford, revealed only the pus cocci. With the advent of warm weather there was soon improvement in his general condition; he was able to walk about with the aid of crutches, but the remaining swellings persisted, with occasional slight remissions as to both size and tenderness. August 22d there was found well-marked fluctuation in both tibial swellings. The patient was anæsthetized and a free incision made in each. The right was eight or ten centimetres long, gave exit to a small quantity of scropurulent matter, and exposed an area of denuded bone six by two centimetres. The periosteum was necrotic over this area, and at the upper part of the incision was a shallow carious cavity in the bone. This, with the area of denuded bone, was thoroughly curetted, the necrotic periosteum was cut away, and the wound irrigated and dressed as usual. The left tibial swelling was treated in a similar manner, but no carious bone was found. Both wounds were healed in about six weeks. From this time to January 15, 1897, several other foci developed, one on the postero-lateral surface of the left tibia, one on the outer border of the left ulna, and one on the lower anterior surface of the right tibia. The two former disappeared spontaneously; the latter was operated upon January 15, 1897. The patient was attending to business part of the time, going about on crutches, and in February went South. He returned about two weeks ago, much improved in general health, and was able to be about freely with the aid of a cane. No new developments had occurred, but the femoral swelling on the right leg is still marked, tender to firm pressure, and occasions slight inconvenience in walking. The left has almost disappeared.

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* Read before the Nebraska State Medical Society, May 19, 1897.

The general treatment has consisted in the administration of guaiacol in doses reaching twenty drops, with strychnine, one to twenty grains, the bone marrow extract, and at times iron and iodides. The greatest benefit appeared when on guaiacol. Locally, guaiacol, ice, heat, and poultices were used at different times.

The question of greatest moment in the management of this case was as to operative interference. The patient was much averse to such, unless clearly indicated, and the text-books at my command gave me very little, if any, aid. Several surgeons saw this case and were indifferent to operation. The fact of spontaneous subsidence and disappearance of some of the areas involved led to a procrastination about operating upon others, which I am sure delayed recovery.

In volume xxii of the *Annals of Surgery* an article upon Post-typhoid Bone Lesions appeared from the pen of Dr. Harold C. Parsons, assistant in the clinic of Dr. Halsted in the Johns Hopkins Hospital. This paper came to my notice while I was in attendance in Case II, above reported, and gave me more satisfaction in a study of the subject than could be obtained from any other resource at my command. In the Toner Lecture, 1876, Parsons writes, W. W. Keen quoted forty-one cases, thirty-seven of which had followed typhoid fever. In the same year Sir James Paget described most fully, from the clinical standpoint, an inflammatory condition of bone occurring at various periods after typhoid fever, pursuing a more or less chronic course, with but little tendency to spontaneous recovery except after long periods of time. He had seen some seventy cases, all after typhoid fever. The discovery of the Eberth-Gaffky bacillus as the specific cause of typhoid fever led to the establishment of a direct specific connection between this disease and the bone lesions which followed. Ebermaier, in 1887, found in two cases of suppurative periostitis, following typhoid, the Eberth bacillus in pure culture. Orloff, in 1889, found the same in a periosteal abscess six months after typhoid. Achalme, Melchior, Golgi, and others have had a similar experience. In these cases the typhoid bacillus was regarded as the sole cause of the pathological condition in the bone lesion sequelæ. Other writers have reported finding pus cocci alone in the discharge, and also those associated with the Eberth bacillus. That this bacillus has pyogenic properties has been proved beyond question by Orloff and Adenot, who succeeded in producing suppuration by injection, subcutaneously, of pure cultures, the pus showing this bacillus alone. The experiments of Golgi are of interest in this connection. He injected the pure culture at some distance from the seat of fracture in a long bone in the lower animals, with the result of producing suppuration at the point of injury; the pus showed the typhoid bacillus alone.

Dr. Parsons, in his article in the *Annals of Surgery*, reported six cases observed in Johns Hopkins Hospital Clinic, five of which were worked out bacteriologically. In four out of the five the typhoid bacillus was found in pure culture; the fifth case was one of mixed infection, the lesions of the radius showing the specific germ associated with the *Staphylococcus pyogenes citreus*, and the tibial lesion the *Staphylococcus pyogenes aureus* alone.

The bones most commonly involved are the ribs, tibia, femur, radius, ulna, and humerus. It will be noticed in my second case that both tibiæ, both femora, the costal cartilage, and the left ulna were involved at the same time. The tibia is said to be most commonly affected.

It is typically a post-typhoid affection, occurring after the fever has entirely subsided, and sometimes as late as several months afterward. The latest recorded observations are from between ten and a half to eighteen months following the disappearance of the fever. In one instance, reported by Ebermaier (Parsons), the lesion appeared on the thirteenth day of the fever.

The disease is usually chronic and the duration variable. In suppurative cases the necrosis may persist for several years. In cases unattended by necrosis there may be subsidence and relapse, extending over a long time. In my own case, at present writing, now sixteen months after the fever, the femoral enlargement on the right side is very marked, although attended by only slight tenderness, and with no tendency to suppuration. Sir James Paget refers to one patient who remained subject to repeated attacks of pain and swelling of the periosteum three years, yet without any sign of suppuration (Parsons).

Pain and swelling involving the bone, are the chief symptoms. Fever is, as a rule, said to be absent. In my second case there was for months a daily rise in the afternoon to from 99.5° to 101° F.; the pulse is not accelerated; the appetite and digestion are not interfered with. Indications of suppuration are redness, increasing tenderness, and fluctuation. The diagnosis in acute and early well-defined chronic cases is simple. The history of preceding fever will establish a relationship. In my second case the severity and distribution of the pain without manifest lesion for nearly two weeks led to a suspicion of multiple neuritis. This error would hardly have occurred in any other than a case of multiple lesion.

The treatment will vary according to the type and extent of the trouble. In acute cases, such as my first reported, the indications for early operative interference are plain. The intensity of the pain, the exquisite tenderness, and the swelling are quickly relieved by a free incision through the periosteum. So early in the case rarely will any destruction of periosteum or bone be found.

In the more chronic types, the fact that spontaneous recovery does occur tends to place one in doubt as to the necessity for operation in cases which do not present the signs of breaking down. That this might frequently be prevented by early use of the knife I think is true. Where signs of suppuration are present, an operation for the removal of all diseased structures, whether of skin, periosteum, or bone, should be done. Incomplete attempts are apt to be followed by long-continued suppuration and necrosis. The persistence of the germ in involved areas has been found to continue for several years, one having been reported as long as seven.

Aside from the usual tonic line of treatment which the indications call for, I am satisfied that the internal and local use of guaiacol has answered well in my hands. Amelioration of swelling and tenderness certainly followed the use of this drug in the case I observed so steadily and so long. Twenty-drop doses were reached by degrees and no unpleasant symptoms presented.

There were no effects apparent from the iodides, even when carried up to large doses, nor from the salicylates.

In the most active period of the disease rest should be enjoined; at other times, when the lesions are in the lower extremities, the use of crutches will materially aid in permitting the patient to enjoy the benefits of being more or less in the open air.

A REMARKABLE
ANGEIONEUROSIS OF THE TONGUE,
DUE TO THE APPLICATION OF CHROMIC ACID TO GRANULATIONS ON THE UPPER AND POSTERIOR PORTIONS OF THE TYMPANIC MEMBRANE.
A CONTRIBUTION TO THE PHYSIOLOGY OF THE CHORDA TYMPANI NERVE.*

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Mrs. ——, of German birth, superintendent of one of our city hospitals, aged about forty-eight years, of average good health, not of a nervous temperament, certainly with no hysterical tendency, active, though weighing over one hundred and eighty pounds, consulted me about a year ago for a left chronic otitis media purulenta, which had existed for a number of years. She had been treated both here and in Germany a number of times, and this was an exacerbation of the disease, in character similar to a number of previous attacks; a muco-purulent discharge, slightly offensive, and a dull evanescent pain being the only symptoms of which she complained. On examination, I found in the tympanic membrane, after cleansing the canal, a perforation about two by three millimetres in diameter, the superior margin of which was formed by the posterior fold, the anterior margin by the malleus handle, the posterior margin by the posterior edge of the annulus tympanicus. The opening was filled with granulation tissue.

Under cocaine anæsthesia, I removed, by curetting, as much of the granulation tissue as possible, then cauterized the base with chromic acid, and ordered the patient to use a bichloride solution (1 to 6,000) as an aural douche three times daily, to be followed by the instillation of a few drops of a solution of fifty-per-cent. alcohol (afterward increased to seventy-five per cent). Later, the solutions were stopped and insufflations of powdered aristol were used. Finally, after the third application of chromic acid, I did not see my patient professionally for some time, but when I did meet her casually she informed me that her ear was all right, but that during the night of the same day on which she made her last visit to my office her tongue became so swollen that she could hardly breathe for a few hours. I paid but little attention at the time to her account of this occurrence.

About six months later Mrs. —— again visited my office, complaining of a renewal of the discharge. I found a little granulation tissue present, and used the chromic acid as on the previous occasion. The next day I learned that, about twelve hours after I had made this application, her tongue began to swell very rapidly—indeed, so rapidly that in two hours she could not protrude it, nor could she shut her jaws; and the swollen parts interfered so markedly with her breathing that Dr. George F. Little, of the house staff, had seriously considered the advisability of performing a tracheotomy. Happily, by the administration of purgatives and by the local employment of ice, tannic acid, and leeches (the latter applied near the angle of the jaw), about three hours after the œdema first showed itself the swelling began to subside, and within twenty-four hours after the application of the chromic acid the œdema had practically disappeared. Accompanying the glossal œdema and the œdema in the submaxillary region were small areas of œdema over the right frontal eminence, over the balls of both thumbs, over the internal malleolus of one ankle joint, and under the ball of the right foot. I also learned that the first attack which she had (to the recital of which I had paid so little attention) came on about the same length of time after my application of the acid and followed about the same course as that which I have just described. Dr. Frederick J. Schoenberger attended her in the first attack and also saw her during the second one, and found them in every way very similar. On the second occasion, thirty hours after she had visited my office, there was no evidence of abnormal irritation in or about the membrana tympani, the external auditory canal, the pharynx, or the buccal cavity.

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* Read before the American Otological Society at its thirtieth annual meeting.

Both Dr. Beck and Dr. Collins of the visiting staff, who were informed of the symptoms on the next day, pronounced it to be, in their judgment, a case of angeio-neurotic œdema.

Dr. Joseph Collins (in the *Reference Handbook of the Medical Sciences*, William Wood & Co., 1893, vol. ix, p. 42) defines angeio-neurotic œdema as "a vasomotor neurosis, characterized by the appearance of circumscribed swellings on various portions of the body, by preference the face, throat, and extremities, without apparent cause or premonition and non-inflammatory in character. . . ."

"Of the directly exciting causes, cold and traumatism are the most obvious. . . . The period in the twenty-four hours when attacks are most liable to show themselves is during the time between 1 and 5 A. M., when the tide of life is at its lowest ebb and the parts are the least resistant." In the case under discussion the œdema arose somewhat earlier than this.

Dr. Collins, in the article above quoted, relates that, in a total of seventy-one cases collected, the swelling showed itself for the first time: in the face, in twenty-nine cases; in the larynx, in five; on the gums and palate, in one. In the remaining cases various other parts of the body were affected, but no mention is made of its occurrence in the tongue.

To quote further from Dr. Collins's article: "The nature of the lesion is unquestionably that of a non-inflammatory œdema circumscribed in form. . . . It is probable that, although the lesions or the irritants upon which the disease is dependent may attack the other parts of the system, yet the result directly appears through the sympathetic system of nerves. Furthermore, the nerves affected are undoubtedly the vasomotor nerves. The disease, in its development, has a close relation to other vasomotor neuroses, such as morbid blushing and flushing, exophthalmic goître, and many of the arthropathies as yet not well understood."

It seemed as if, in the present case, there must have been some connection between the application of the chromic acid and the œdema. Mrs. —— had never experienced a similar attack before, nor did she have, so far as I could learn, any hereditary tendency to such attacks. The mere fact that on two separate occasions she manifested these peculiar phenomena, each time within fourteen hours after the chromic acid had been applied, could scarcely be interpreted as a mere coincidence. It certainly looked as if the two things were related to each other as cause and effect. But how to explain it? I never myself encountered anything of a similar nature, and Dr. A. H. Buck, with whom I talked over the case, said that he also had never heard of a similar occurrence. I made a careful search through an index of otological literature covering a period of a number of years back from the present time, but I entirely failed to find a single report of anything resembling the present case.

The conclusion, however, seemed to be warranted that the œdema must in some way be due to the active stimulation of the chorda tympani nerve; and, although the text-books on physiology only speak of the symptoms which arise from electrical stimulation of the chorda tympani nerve, nevertheless it must be possible for such phenomena as are here under consideration to occur from the stronger stimulation supplied by an irritant like chromic acid. In answer to the question, Why did not the œdema manifest itself immediately after the application of the irritant? I may state that the nerve was doubtless surrounded by granulation tissue, and that consequently a considerable period of time might readily have elapsed before the acid (which, as is well known, spreads slowly through the living tissues) could exert its irritant effect upon the nerve. The first few applications, it may be assumed, gave rise to no œdema simply because the granulations were too exuberant at the time to permit the acid to penetrate the nerve filaments. But when we consider how frequently chromic acid is employed for the destruction of granulation tissue in this very neighborhood, it seems remarkable that phenomena of a similar character should not have occurred in the past and have been reported in medical literature. I might, as a matter of course, fall back upon the supposition that this particular patient possessed an idiosyncrasy as regards the effects of this drug; but this would not be, it seems to me, either a satisfactory or a scientific way of disposing of the question.

Although previous to the first attack she never had any similar œdema, yet very lately there has been a swelling of the left hand and of the ball of the left foot, but no glossal œdema. Undue mental excitement was the only cause to which I could attribute this last attack. The discharge from her ear, I might add, had in the meantime entirely ceased, and no evidence of active inflammation remained.

In the belief that they may be of interest to the reader of this paper I will introduce here, without comment, a few quotations from different authorities in regard to the functions of the chorda tympani nerve.

Foster, in his *Text-book on Physiology* (Macmillan and Company, New York, 1889, Book III, chapter v, p. 265), states that "The chorda tympani . . . ends partly on the tongue and partly in a small nerve which, leaving the lingual nerve before reaching the tongue, runs along the duct of the submaxillary gland, and is lost in the substance of the gland; a small branch is given to the sublingual gland." Again, in chapter v, page 265: "The chorda tympani contains afferent fibres which have a remarkable effect on the nutritive processes of the tongue, and the loss of taste due to the destruction of the chorda might be due to disordered nutrition of the tongue, and so be analogous to the loss of smell, which may follow injuries of the fifth nerve."

Dr. C. N. Stewart, in his *Manual of Physiology* (London, 1895, p. 129), states: "The best-known examples of vasodilator nerves are the chorda tympani and the nervi crigentes. The chorda tympani contains vasodilator and secretory fibres for the submaxillary and the sublingual glands. . . . A most marked vascular change is produced by stimulation of the peripheral end of the chorda tympani nerve: the glands flush red; more blood is evidently passing through their vessels. Allowed to escape from a divided vein, the blood is seen to be of a light arterial color and shows a distinct pulse. The small arteries have been dilated by the action of the vasomotor fibres in the nerve. . . . These vasodilator fibres are apparently not in constant action, for section of a nerve, as a rule, produces little or no change."

In Kirkes's *Handbook of Physiology* (American edition, William Wood and Company, 1896, p. 305 *et seq.*) the following statements are made: "The chorda . . . joins the lingual or gustatory nerve, proceeds with it for a short distance, and then passes along the duct of the submaxillary gland, to which it is distributed, giving branches to the submaxillary ganglion and sending others to terminate in the superficial muscles of the tongue. . . . If this nerve be exposed and divided anywhere in its course from its exit from the skull to the gland, the secretion, if the gland be in action, is arrested, and no stimulation either of the lingual or of the glosso-pharyngeal will produce a flow of saliva. But, if the peripheral end of the divided nerve be stimulated, an abundant secretion of saliva ensues, and the blood supply is enormously increased, the arteries being dilated. The veins even pulsate, and the blood contained within them is more arterial than venous in character.

"When, on the other hand, the stimulus is applied to the sympathetic filaments (mere division producing no apparent effect), the arteries contract and the blood stream is, in consequence, much diminished, and from the veins there escapes only a sluggish stream of dark blood. The saliva, instead of being abundant and watery, becomes scanty and tenacious. If both chorda tympani and sympathetic branches be divided, the gland, released from the nervous control, may secrete continuously and abundantly (paralytic secretion).

"The abundant secretion of saliva which follows stimulation of the chorda tympani is not merely the result of filtration of fluid from the blood-vessels, and in consequence of the largely increased circulation through them. This is proved by the fact that, when the main duct is obstructed, the pressure within may considerably exceed the blood pressure in the arteries, and also that when into the veins of the animal experimented upon some atropine has been previously injected, stimulation of the peripheral end of the divided chorda produces all the vascular effects as before, without any secretion of saliva accompanying them.

"Again, if an animal's head be cut off and the chorda be rapidly exposed and stimulated with an interrupted current, a secretion of saliva ensues for a short time, although the blood supply is necessarily absent.

"These experiments serve to prove that the chorda contains two sets of nerve fibres, one set (vasodilator) which, when stimulated, act upon a local vasomotor centre for regulating the blood supply, inhibiting its action, and causing the vessels to dilate, and so producing an increased supply of blood to the glands; while another set, which are paralyzed by injection of atropine, directly stimulate the cells themselves to activity, whereby they secrete and discharge the constituent of the saliva which they produce. These latter fibres very possibly terminate in the salivary cells themselves. If, on the other hand, the sympathetic be divided, stimulation of the tongue by sapid substances, or of the trunk of the lingual, or of the glosso-pharyngeal, continues to produce a flow of saliva. From these experiments it is evident that the chorda tympani nerve is the principle nerve through which efferent impulses proceed from the centre to excite the secretion of this gland."

14 East Forty-fifth Street.

REPORT OF A CASE OF
CONSECUTIVE TUBAL PREGNANCY,
WITH RUPTURE IN EACH TUBE WITHIN FOURTEEN MONTHS.*

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Although the literature of the past few years is replete with reports of cases of extra-uterine pregnancies, reports of consecutive tubal pregnancies are rare. The case which I report presents an involvement of both tubes within fourteen months, operated upon successfully, and also operated upon in the interval of extra-uterine pregnancies for an umbilical hernia, which followed as a result of the first operation.

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* Read before the Society of Alumni of Bellevue Hospital, June 2, 1897.

The history is as follows:

Mrs. A. O., a Polish Jewess, twenty-seven years of age, was brought to Gouverneur Hospital February 13, 1896, in a state of profound hæmorrhagic shock. Her personal history, obtained from her friends, was the following: She had been feeling ill for about two weeks previous to admission, and had not menstruated for six weeks, but for a few days had been having a bloody discharge from the vagina, but not characteristic of menses. Upon examination she presented all the usual appearances of an extensive hæmorrhage except the presence of blood. Pulse was 140, respirations rapid and shallow, thirst, etc. Temperature, 97.5°. Vagina and vulva were bathed in a discharge resembling disintegrated blood. Digitally, a small doughy mass was felt in the right pelvic region. As we were unable to obtain any further history, a diagnosis was made of possible rupture of a tubal pregnancy, and immediate preparations were made for suprapubic cœliotomy.

Previous to and during the operation six pints of normal salt solution were injected into the subcutaneous tissues. Upon incising the abdominal wall in the median line, and just before opening into the peritoneal cavity, dark semifluid material was observed through the peritonæum. As the peritonæum was opened hurriedly a large quantity of blood and clot was expelled. The hand was passed rapidly to the right side of the uterus and grasped a mass about two inches in diameter; this was brought to the surface of the abdominal wall and found to be a ruptured tubal-gestation sac, with the fœtus in the intact membranes protruding from the rupture. The rupture was within half an inch of the uterus and bleeding profusely. Hæmorrhage was checked by compressing the mass with the hand, then a clamp was applied, and a ligature thrown about the proximal end of the tube. The peritoneal cavity contained fully two basinfuls of blood and clot. Owing to the rupture being so close to the uterus as to prevent trusting to a ligature remaining upon the stump, the clamp was left after the tube and ovary were removed, and a large gauze tampon was placed down to the pedicle surrounding the clamp. The patient was put in bed in profound collapse. Another reason for the gauze tampon was that we had just finished dressing two septic cases of appendicitis, and it was feared that in our hurry infection might possibly have occurred.

The patient responded very well within a few hours. Clamp and tampon were removed within forty-eight hours, and a small tampon inserted. An uneventful recovery took place, the patient being discharged March 28th, about six weeks after the operation.

As a result of the injection of salt solution into the groins, and evidently due to air accidentally introduced (Allen pump being used to inject the salt solution), an emphysematous crackling persisted for over two weeks at the sites of the injections. No evil result followed this emphysema.

During her convalescence her previous history was obtained, and is as follows: Family history good.

Personal.—Denies all specific and constitutional disease. Menstruated at seventeen, always without any difficulty. Married at twenty-one; has one child living, and had a prolapse of the uterus, for which she was treated without operation in a hospital in another State. One miscarriage at three months after this treatment.

On November 30, 1896, I saw her for the first time following her discharge from the hospital and found a small hernial protrusion at the site of that part of the wound through which the clamp and gauze had been introduced.

She was operated upon on December 4, 1896, at which time quite extensive adhesions were released. She was discharged on the 20th of December, 1896, with a perfect result.

April 18, 1897.—The patient was again seen by me and in a condition analogous to that of February 13, 1896, with an additional symptom of marked pain, chiefly upon the right side and in the neighborhood of the appendix vermiformis. The discharge from the vagina was black, tarry, and very foul. Patient presented symptoms of sepsis.

Previous history was as follows: Peculiar painful sensation on April 13th in the abdomen. Vomited several times and was constipated. Considerable thirst on the 14th and felt very weak. April 16th, feeling a little better, she arose and did some of her housework. Grew worse on the 17th, and on the morning of the 18th she was found in collapse and brought to the hospital.

Upon examination a mass about three inches long could be felt on the left side through the abdominal wall, but nothing through the vagina. The uterus was thoroughly curetted and irrigated. Vagina made antiseptic. Owing to the adhesions found at the time of the operation for the hernia, it was deemed advisable to save time and difficulty by opening the abdomen through the left rectus. This was done rapidly. Large quantities of blood and clot were found in the peritoneal cavity, and a mass about two inches and a half in diameter connected with the left tube was brought out of the wound. Rupture in this instance was at about the middle of the tube; blood clot and macerated material was all that was found in this specimen. The tube and ovary were tied off with catgut. After washing the peritoneal cavity, but not obtaining an absolutely clean toilet, we searched for adhesions and were astonished to find an absolutely free condition in the intestines, while connected with the uterus one band only, and that but the size of a very coarse cotton thread, was found between the fundus and the parietal peritonæum.

The wound was then closed with catgut, with the exception of its lower angle, through which a Mikulicz tampon was introduced. Vaginal drainage was made and the patient taken to bed. During the operation I was indebted to Dr. F. Huber for his able assistance in injecting into the tissues of the patient five pints of salt solution.

For a few days the patient's temperature was of a septic character, then became normal, and she was discharged from the hospital May 20, 1897, with a small granulating wound at the lower angle of the incision.

During convalescence from the operation she states that her last menstrual flow took place on March 22, 1897.

Suprapubic cœliotomy was performed in both instances as a result of the marked evidences of hæmorrhage which we supposed to be in the active state, and we feel satisfied that had the vaginal route been accepted in either case the result would not have been so satisfactory. Vaginal drainage was made in the second operation because of the foul odor to the discharge found in the vagina and also of the septic appearance of the patient.

149 WEST FORTY-FOURTH STREET.

INOCULATIONS IN TUBERCULOUS IRITIS.*

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THE proper method of verifying the diagnosis of tuberculosis of the iris consists of inoculations into the anterior chamber of rabbits.

The omission is explained by the fact that iridectomies are permissible only in cases with pupillary occlusion ("seclusio pupillæ").

Though it seems best to prove the presence of the bacilli by the same method by which sputum is examined—*i. e.*, by the microscope—this is not always possible. Baumgarten, *e. g.*, has reported some cases in which, despite the use of material without bacilli, true tuberculosis nevertheless developed after the inoculation. He believes this to be caused by involution (spores) of the bacilli. Nevertheless, the inoculation into the rabbit may prove to be a failure too, although a true tuberculous iritis exists in the patient, as the following observation shows:

A large portion of the iris of a man thirty-three years old, presenting parenchymatous keratitis with nodular iritis, was removed by iridectomy and cut into two parts, a ciliary and pupillary one. Inoculations into the anterior chamber of two rabbits were made; the iris of the rabbit inoculated with the pupillary portion was not affected, while that inoculated with the ciliary portion showed the beginning of iritis about four weeks after the inoculation; hence, from the consideration of the above-mentioned results we might suppose that the bacilli irregularly distributed over the iris may have accidentally spared that particular portion of iris which was excised and utilized for inoculation. In view of this an observation of Leber's is interesting; it concerns a girl, thirteen years old, with the clinical picture of tuberculosis of the iris, complicated with a suspicious catarrh of the lungs and a previous tuberculosis of the elbow joint. Nevertheless, the inoculation was unsuccessful.

I may here be permitted to make some remarks upon inoculation tuberculosis. Both in human and in inoculated tuberculosis of the iris we observe various forms, either the more benign nodules, or, at other times, the granulation tumors, which latter generally destroy the eye by cheesy degeneration. Samelsohn investigated the cause of this varied clinical manifestation, introducing the tuberculous virus from one rabbit into the anterior chamber of another, and so on with a series of rabbits, in order to immunize them, but without any success.

I have followed a different method, using extremely infectious cultures of tubercle bacilli and cultures artificially attenuated in their virulence (at 40° C. for one hour in the incubator, or cultures which had been exposed to the daylight in the laboratory for about six months), using for my material rabbits, some very strong or very weak, others again which were old or young. I have always made control experiments. As to the technics of inoculation, I introduced the bacilli into the anterior chamber, suspended in a watery medium, using a hypodermic syringe.

The result of the inoculation was that the physical condition of an animal, whether strong or weak, had no influence at all upon the benignity or malignancy of the course of the tuberculosis. I find, for instance, in my records an experiment concerning a very small and weak rabbit into which a very virulent culture was injected; small, multiple nodules gradually developed in the iris, but disappeared again after about seven weeks; while a strong rabbit, infected with some of the same culture, showed a granulation tumor of about the size of a pigeon's egg.

We find analogous conditions in human tuberculosis. In a previous publication I demonstrated that patients afflicted with ocular tuberculosis do not invariably exhibit a general scrofulous condition. Among eighty-six cases, *e. g.*, of tuberculosis of the human iris, ascertained by microscopic examination or inoculation, there existed no simultaneous tuberculosis of the body in seventy-one, although among the latter twenty-seven were suspicious and four presented signs of previous tuberculosis of other organs. But, excluding these thirty-one cases, forty are left—nearly fifty per cent.—absolutely sound and healthy persons, a fact by which we understand why in many cases, observed only from the clinical picture, the diagnosis of lues was more frequently made than that of tuberculosis.

Furthermore, the attenuation of my cultures was absolutely indifferent as to the intensity of the tuberculosis. The same picture of tuberculosis could be produced with attenuated as with very virulent cultures.

Therefore the different intensity of reaction is not due to the bacilli, but to the susceptibility of the inoculated organ—viz., to the individual aptitude or immunity of the entire organism, or even, perhaps, of certain parts.

I have still to mention the result of inoculations into the ciliary body of some rabbits. There developed a small or large tumor of the ciliary body with iritis, but usually without any nodules in the iris itself. In some cases there were also nodules in the chorioid, associated with neuritis optica and subsequent atrophy of the optic nerve. In consideration of the results obtained in these latter experiments, we might well-nigh regard as of tuberculous nature some forms of serous inflammation of the iris which clinically may present as their ætiological base a tuberculous nodule of the ciliary body.

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* Read before the German Medical Society, New York, June 7 1897.

It is a well-known fact that the tuberculosis of the iris in the human being, as well as in the inoculated animal, may heal, the small nodules especially often disappearing without any further damage to the eye. As to the *metastasis* and *generalization* of tuberculosis of the iris, I have to state that in no instance the tuberculosis of the inoculated rabbits became general. They remained under observation for about a year. This fact—though the percentage might be somewhat high—is especially interesting since it is contrary to the common views, according to which it was particularly noteworthy when the animal did not succumb.*

In accordance with my own views these results prove that similarly the tuberculous processes in the human iris (and chorioid) generally remain localized, and that we have to regard them in the same light as the local tuberculosis of the lungs, bones, glands, and articulations. If we consider in that light the above-mentioned eighty-six cases of tuberculosis of the iris we find that in only eleven cases there followed a tuberculosis of other parts of the body, while in eight cases, which had perished, a previous or coincident tuberculosis was demonstrated. The other sixty-seven cases remained healthy, nearly two thirds of them remaining under further observation for some time, in some instances covering a period of nearly eleven years.

In connection with this I stated in a previous paper the rarity of *metastasis in the eye* from local tuberculosis of the lungs, articulations, etc. In only five cases did I see lesions of the chorioid which might possibly have been tuberculous in nature, while two hundred and fifteen did not show any changes in the eye.

Therefore, in cases of tuberculosis of the iris (and chorioid) *I would hesitate to perform an enucleation of the eyeball.* It might be advisable only in cases of rapidly growing granulation tumors, which usually entail destruction of vision; but even in such cases the fact has to be considered that metastasis may originate not from the tuberculosis of the eye, but from other structures as well; for instance, we know that tubercle bacilli are found in the glands of people otherwise perfectly healthy. From such a source bacilli may as well infect the iris as other organs of the body. I should like here to draw attention to a very interesting paper of Dr. Freudenthal's (*Annals of Otology, Rhinology, and Laryngology*, February, 1897) concerning the presence of tubercle bacilli in the nasopharynx, whence the bacilli may enter the lymph paths and produce tuberculosis in any part of the body.

AN INVESTIGATION INTO

THE EFFECTS OF MASTURBATION.

By A. C. McCLANAHAN, M. D.,
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To observe the individual phenomena of Nature as they occur in the ordinary course of events or in artificially conducted experiments, and to ascertain the circumstances which invariably accompany particular phenomena, is a tedious process, but it is in this way alone that laws of Nature can be discovered. This is the inductive method of modern science, and it is to this method alone that modern physical and biological sciences owe their vast superiority to the metaphysical speculations and the poetic fancies of earlier ages. It might seem that in such an age as our own, in which the advantages of the inductive method and the utter untrustworthiness of the speculative method are so apparent, there would be no attempt to prove a law of Nature by authority, or in any other way than that which begins with the actual results of observation or experiment, and proceeds inductively from these individual facts to the general truth which gives these facts coherence, and which we call a law. But it is easier to speculate than it is to observe or experiment, and in that department of science which concerns itself with living organisms the objects of observation and experiment are susceptible of alteration by so many causes that are entirely unknown to us, the phenomena to be observed are so complex and numerous, and the results of experiment are often so long delayed, that the respect which mere authority is still able to command in this branch of science is not always so surprising as it might at first seem.

To determine with precision the effect on the human organism of a given habit would involve a precise knowledge of the condition of persons who had practised that habit, and the elimination of the effects of all other causes that had contributed in any way to bring about that condition. But some of the effects of any habit are not immediately perceptible, and, if the observation is to be complete, it must be extended over the whole lifetime of the individuals under observation, and the observer must take cognizance of every cause that has, during all of this period, contributed to bring about the final condition of the observed. It may be suggested that the effects of a habit do not cease even at the death of the individual who has practised that habit, but it is as far beyond the province of science to deal with final effects as it is to deal with first causes, and this phase of the question need not concern us here.

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* In connection with these observations, I may mention a publication of Martinotti (professor of pathology at Bologna, Italy, *Centralblatt für Bakteriologie*, 5, ii, 96) concerning a distinct antituberculous action of sodium sulphocyanate. Martinotti made inoculations into the anterior chamber of rabbits with tubercle bacilli, and found that after the injection of sodium sulphocyanate the rabbits, "to his and his assistant's great astonishment," did not succumb to general tuberculosis.

In addition to the difficulties which would be encountered in the study of a habit practised openly, without fear of censure or disapprobation, the investigator, in the case of a habit publicly regarded not only with disapprobation but with positive horror, would meet with the difficulties involved in concealment, deception, and falsehood.

Besides these real and perfectly apparent difficulties, the physiologist is liable to be confused by the arbitrary distinction between the normal and the abnormal; and he is apt to waste valuable time in a fruitless attempt to ascertain what is normal and what is abnormal. Strictly defined, "normal" means "according to rule." But rules may be either good or bad. All rules are artificial, and many of them are purely arbitrary. Infinite Nature is under the eternal dominion of unvarying and inexorable law, but this unvarying law produces a ceaseless succession of constantly varying events. These events are never "according to the rules" of man, for Nature will not be restricted by the conditions of a fashion plate. No two natural phenomena are precisely alike. No two natural objects exactly resemble each other. Everywhere we are confronted by the utmost variety conceivable—nay, by a variety that is often inconceivable; yet, go where we will, we shall not be able to overstep the boundaries of the natural; search as we will, we shall not be able to discover an effect that is not in strict accord with Nature's immutable law. If we are unable to discover anywhere in Nature a strict conformity to our standards of normality, we may console ourselves with the reflection that we shall be equally unable to discover anything that is not strictly natural. It is unquestionably true that the adjective "abnormal" is habitually applied to a class of beings whose condition is deplorable, and would be quite as deplorable by whatever word it might be designated, but it is also applied to a still larger class of beings who could have no reason or excuse for wishing to change their condition except their desire to escape the name by which it is called. Such persons might be able to extract some comfort from a knowledge of the fact that the abnormity from which they so shudderingly shrink is a phantom of man's own creation. Indeed, in these days of "perversion" and "degeneration," a very general spirit of gloom might be dispelled by learning that this grotesque evil which has settled upon the human race, and is gradually crushing the joy and beauty out of life, is but an incubus of words. In the vain pursuit of the Will-o'-the-wisp, normality, we shall hardly fail to miss the substantial good of happiness. Whatever may be abnormal, there is nothing unnatural. The time has long since passed when it was excusable to attribute unfamiliar or undesirable conditions to supernatural, unnatural, or other non-natural causes. Vast Nature is the mother of us all.

Having cleared the ground of the imaginary difficulty involved in the distinction between the normal and the abnormal, I shall endeavor to attack some of the real difficulties of the question of sex with far less confidence of accomplishing an equally complete result—indeed, with perfect assurance that I shall accomplish scarcely any result.

I shall first direct the reader's attention to the histories of individuals who have actually practised unusual methods of obtaining sexual excitement and gratification. These histories have been taken at random from all the persons, aside from actual patients, from whom I have been able to obtain a statement of their sexual habits. While the histories I offer are not the only ones I have obtained, they are typical of all the rest. Histories of non-patients have seemed to me to be better illustrations of the effects of the habit under discussion than histories of patients could be, for, though I have often been able to demonstrate that persons who had consulted me for sexual debility were really in sound health and were suffering only from mental distress, this element of distress which leads a person to consult a physician is extremely apt to mislead us in our interpretation of its cause. Again, persons broken in health wholly by other causes sometimes consult us only on account of the imagined effects of masturbation. Lastly, those persons who are really suffering from the evil effects of sexual excesses and irregularities are very frequently suffering also from the effects of a thousand other injurious influences, and to regard these broken wretches as fair illustrations of the effects of sexual irregularities would be as illogical and misleading as to regard them as examples of the effects of taking salt with food. How easy it would be in this way to damn salt for all time!

However justly it may be said of the following histories that they are not novel, and that they could be duplicated and indefinitely multiplied by any one who would take the trouble, it is to be remembered that the trouble which any one would have to take in order to do so would be considerable; that, so far as I know, no one else has ever taken it; and that it may be of advantage to have a few facts bearing on a subject already well enough supplied with assumptions.

The first eight of the following cases occurred more than twenty-five years ago in a New England high school. They include all of the pupils of this school of whom I have been able to learn anything, and, while none of these cases were under my own observation, I have the best of evidence that the sources of my information are perfectly trustworthy.

Case I.—Habitual masturbator. Practised the habit in the presence of his fellows, and alone at night.

Became a popular Catholic priest. Died when about thirty years old. Cause of death unknown.

Case II.—Practised the habit exactly as in the preceding case. Became a popular Universalist minister, and is one at present. Draws large congregations. Is a scholar and a noted man. Married.

Case III.—Practised the habit as in the preceding cases, alone at night, and in presence of his fellows. Became captain of ocean passenger steamer on a great American line. Was a brave and skillful man, and was one of the youngest captains afloat. Drowned at sea.

Case IV.—Masturbator as the rest, though am not certain that he ever practised the habit in presence of others. Is instructor in charge of large gymnasium. Married.

Case V.—Masturbator as the rest. Became a successful dentist. Is married.

Case VI.—Masturbator as the rest. Became a sailor. Can not learn what became of him.

Case VII.—Habitual masturbator. Sometimes practised the act in presence of his fellows. Became clerk of a large hotel. After a number of intrigues finally married.

Case VIII.—Masturbator as the rest. Became large merchant.

So far as I could learn, none of these persons ever sought or obtained medical treatment for the results of their habit.

Of the next two cases I have intimate personal knowledge. They present what can scarcely fail to be an interesting contrast between a masturbator and a non-masturbator with the same parentage and environment.

Case IX.—A. P. began masturbating when he was only ten or eleven years old, and in a few months was so addicted to the habit that he practised it nearly every night, and continued to do so without cessation till he was married at the age of twenty-four. After getting warm in bed, he would almost invariably masturbate, after which he would promptly fall asleep, and sleep till morning. During all of this time he lived on a farm. He was always active and industrious, and, as he grew to manhood, he was one of the hardest and most continuous workers I have ever known. He attained a height of five feet ten inches, a weight of one hundred and sixty-five pounds; his muscular development was fine, and is at present. He was never confined to the house by sickness after his early childhood. His mental development was not equal to his physical, yet he was a faithful student at the country school which he attended in winter. He was superior to most of his class in arithmetic and algebra, and also in grammar; was a fair reader, and an abominable speller. Until he was fifteen or sixteen years old he was as cheerful as any country boy, but at this time a book treating of the sexual organs and functions fell into his hands through the medium of soliciting agents. This book, like the rest of its kind, was only fit to be burned, and books sold to the laity by subscription are not the only ones of which the same might be said. The hideous fate of masturbators as described in this book made a profound impression on A. P., and he tried to break off the habit; he learned, however, that he was powerless to do so, and from this time forward he was less cheerful, markedly irritable, and was called a grumbler; but he was no less active or industrious, and no more tolerant of laziness in others. He is still an industrious farmer, is the father of three bright children, and has lived happily with his wife ever since he married her ten years ago. If size is an evidence of vigor, his generative organs must be remarkably vigorous, for, even after the most protracted abuse, his erect penis measured seven inches along the dorsum from pubes to glans. As to any decline in sexual desire, I heard him say about a year before he was married that whatever happened to him in the next world, he wanted to live long enough in this to have sexual intercourse.

Case X.—C. P. is a brother of A. P., and is nearly of the same age. C. P. had been warned at a very early age of the evils of self-abuse, and, although he had keen sexual desire from the age of puberty, he never masturbated nor indulged in sexual intercourse till he was married at the age of twenty-seven. He is about two inches taller than his brother, more amiable, and was easily at the head of all his classes in school. He was more fond of books than of manual labor, though he was not lazy. From puberty till the time of his marriage he had frequent nocturnal seminal emissions, which did not altogether cease even after his marriage. During his boyhood and adolescence he suffered frequently and intensely from migraine, and has been troubled more or less with insomnia ever since he was twelve years old. He chose an intellectual calling and has achieved success in it.

Case XI.—S. M. is a gentleman whom I have known intimately for many years. He is forty years old, six feet tall, and weighs one hundred and ninety pounds. He is a hard-working and successful physician, and has suffered so little from any form of ill health that he can scarcely realize the significance of pain. Has been married fifteen years, and is the father of two fine boys. He frankly admitted that he had masturbated "terribly" during adolescence; but, unfortunately, I did not press him for a definition of "terribly," and I do not care to broach the subject again. He is a man of acute perception, excellent memory, and sound reasoning powers. He never had illicit intercourse, and, aside from the practice of masturbation in his youth, has lived an exemplary life.

Case XII.—D. E., aged fifty years, about five feet eight inches tall. Hair gray. Refined in appearance and agreeable in manner. During the whole period of adolescence and early manhood he masturbated habitually—usually several times a week, and often several times in one night. His parents learned of his habit, and, with the kindest intentions, did more harm than good by their efforts to stop it. The consequences of self-abuse were pictured to the boy in the most appalling colors. His soul recoiled in horror from the fate that was said to be in store for him unless he discontinued his habit—nay, he was made to believe that his filthy habit had already rendered him unfit for human companionship. In one moment of despair the light of his life went out. Henceforth his most resolute and continuous efforts were directed to the conquering of his habit, but he would grow weary of the gloomy struggle; from sheer exhaustion his vigilance would relax; and the pruriency of his nature, which had apparently only been husbanded by repression, would break forth with an imperiousness which he was powerless to resist. A wave of passion would sweep over him, which, gathering fury with its progress, would make his blood boil and seethe with sensuality till the complete act of masturbation had given him relief. Then he was plunged into the depths of despair and degradation till the inevitable temptation came again. Feeling its approach, he would kneel at his bedside, and, with tears streaming down his face and sobs breaking his voice, would pray to God to help him overcome his hideous habit; and he would then go to bed and masturbate without delay.

Believing at last that his soul was lost, he left off praying; and believing that his manhood was lost, he refused to think of marriage. One night, being partly intoxicated, he stayed till morning with an amorous widow, and surprised both himself and the widow with his copulative powers, which had been tried but once before, and that time without success. Perceiving that his poor opinion of himself was without foundation, he went into the society of refined women, and many years ago he married a charming woman, with whom he has lived happily ever since, and by whom he has had two healthy children. D. E. is one of the most brilliant writers connected with journalism.

The late Dr. E. R. Palmer, of Louisville, in a most excellent paper, which needs no praise of mine to commend it to every truth-loving reader, says: "Of the male human being it may be said that he begins sexual life as a masturbator." * So many statements of the same general fact are to be found in the literature of the subject that, if the particulars on which these general statements are based could be found, the foregoing histories might have been omitted; for if, approximately, all men have, at one time or another, been masturbators, the history of masturbators is simply synonymous with the history of the race. But if the revelations of our consultation rooms point to this conclusion, what shall we say when an investigation which leaves our patients altogether out of the question points distinctly to the same conclusion? If, here and there, we find a man of unimpeachable veracity who denies that he has ever masturbated, we also find that his career has been in no way remarkable, and that his life has been as full of pain as the lives of his less continent fellow-men. The facts are too meagre to warrant implicit confidence in all the conclusions that might be based upon them, but of one thing we may, I think, be certain: the evil effects of masturbation on both the body and the mind have been grossly exaggerated, not only by the laity but by the medical profession, and the effects of this exaggeration have been worse than the effects of the habit. There can be no doubt that the habit is, temporarily at least, morally degrading; but if we bear in mind the selfish, solitary nature of the act, the entire absence in it of aught akin to love or sympathy, the innate repulsiveness of intense selfishness or egoism of any kind, we may see how it may be morally degrading, while its effect on the physical and mental organism is practically nil.

A more thorough knowledge of sexual physiology may enable us to teach the adolescent how to lead a sexually wholesome life, without filling his soul with the bitterness of a self-contempt that shall haunt him to his grave.

INTRACRANIAL COMPLICATIONS FOLLOWING ACUTE SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

WITH A CASE.

By JOHN F. WOODWARD, M.D.,
LATE ADJUNCT PROFESSOR OF EYE, EAR, AND THROAT IN THE UNIVERSITY COLLEGE OF MEDICINE, RICHMOND, VA.

On April 13, 1897, I was called out of my office about midday to see Mr. V., who was said to be suffering a great deal from trouble in the head. I found him resting quietly, though at intervals a throbbing, shooting pain in the right ear caused him a great deal of discomfort; he was also very much depressed on account of a chill which he had just emerged from. By illuminating the external ear I could easily see the bulging and congestion of the tympanic membrane.

As he had only suffered about two hours I decided to wait several hours before opening the drumhead. Prescribing a calomel and saline purge and some quieting potion, I left. About six hours later I received a telephone message that the ear was discharging and the patient felt better. Next morning he came to my office, when I made a thorough examination, enlarging the rupture for a freer discharge, and obtained the following history:

Aged forty years; healthy and robust all his life; never had a spell of any kind; weighed a hundred and eighty-five pounds; a total abstainer; no specific history, and a man of regular habits; he had received a blow upon his head, did not remember which side, about six weeks before, and while it did him no apparent harm, it was sufficient to knock him down at the time. Though a perfectly well man, he had not had a feeling of well-being for several weeks. Urinary examination showed excess of urates, otherwise all right. On the morning of his attack he was helping a servant lift a heavy barrel, and all of a sudden he dropped the barrel, saying, "I'm going to die, I have burst something in my head," and staggered up to his bedroom, where I found him later on.

He had the sensation of something loose in the right temporal bone, and several hours afterward had the chill. His wife then informed me that she feared her husband was seriously ill, as he had acted very peculiarly for the last two weeks, becoming very morose or irritable at times, somewhat absent-minded, and restless at night, also had had a very decided flushing of first the right and then the left side of his face, but that his general health was so good he had not consulted a physician.

The right side of his face was decidedly congested, and I told him though he had nothing more than a discharge from his ear, which was serious enough in itself, that he had better keep me advised as to his condition each morning and night. The discharge was free, of a thin muco-purulent consistence, streaked with blood.

April 14th.—Temperature normal and discharge free; little or no discomfort; he walked down to his place of business and remained several hours.

15th.—I saw him at his house; right side of face very red and some little discomfort in the ear, and patient restless. I cleansed the ear and enlarged the opening in the drumhead, which had closed up somewhat; he had used and was then using a listerine spray to nose and throat for nasal catarrh.

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* A Contribution to the Physiology of Sexual Impotence. *New York Medical Journal*, July 2, 1892.

16th.—Discharge free; no pain in the morning and little or no discomfort; face red on both sides in the afternoon, and some fullness and slight pain in ear.

17th.—Patient looking well and feeling fine; discharge not quite so profuse; no odor (there never had been any), but looked more purulent. I kept bowels open, and put him on light diet and two grains of quinine three daily. He was doing so well that I left the city for a few days and turned my patient over to Dr. Baker.

History kept by Dr. Baker:

18th.—Patient doing splendidly; no pain or discomfort at 10 A. M.; 7 P. M. was called and found patient suffering with slight pain in the ear, pain in small of back, and temperature 100° F. As he got worse during the night Dr. Baker remained with him. Temperature went up to 102° F. during the night and there was slight delirium; discharge from ear scanty; treated patient for meningitis.

19th.—Patient was quiet and perfectly conscious; still complains of pain in small of back and nape of neck; temperature 101° and 102° F. during the day; at night, temperature 102° and 103° F.; patient slightly delirious; pain in small of back and back of head; no pain or discomfort about the ear; discharge scanty and purulent; ear kept clean.

20th.—I saw the patient and found him quiet and rational, and the rupture in the drumhead open and a slight discharge of pus; no tenderness or puffiness over mastoid, the redness of that side of face subsiding, and no pain or discomfort relative to the ear; he still complained of pain in the small of the back and nape of the neck; temperature ranged during the day from 101° to 103° F. I arranged to open mastoid that evening, but patient rested so quietly that I waited until morning. He had a fairly good night.

21st.—Temperature, 100° F.; drowsy, but not at all delirious, nor did he show any signs of suffering; pulse, 80; respiration normal; slight discharge from ear; no odor, and redness subsided. A few hours later I saw patient and he could not be roused—he was in a stupor; Temperature, 103° F.; pulse, 110. I opened the mastoid as soon as possible. Operation under ether, though it took very little to prepare him for the operation. When the skin was removed I was at once struck by the peculiar color of the cortex; it looked as if a very thin veil was covering a network of venous sinuses; a slight tap of the hammer carried the chisel into a mesh of cells filled with venous-looking blood. There was a constant flow, and the operation was continued only under continued mopping of blood. By use of the scoop I easily passed down three fourths of an inch without finding pus or hard bone, but then struck a very hard plate of bone, through which I chiseled into the antrum; no pus was found, and the antrum was healthy. I then opened up the mastoid freely, but found no pus; the tympanum was denuded of the mucous membrane or periosteum in its lower floor, extending over to the inner wall, and outward to the outer and upper posterior wall. It was thoroughly washed out and little or no pus found; as the patient was *in extremis* and there were no special localization symptoms, I packed the wound with iodoform gauze and put the patient in bed; he reacted promptly, and for several hours seemed to be slightly improved, though never regaining entire consciousness. In four hours his temperature was 107° F., and his pulse could not be counted; he vomited a lot of coffee-ground-looking material; respirations, 40 and jerky; a severe vomiting spell twenty minutes later, when respirations came down to 14, pulse 60, and he died without a struggle—in coma.

Though septic brain and meningeal infections through middle-ear suppuration are not exceptions and hundreds of cases have been reported, I have not read of one just like the one reported. Although the literature of otology is to-day full of the reports of cases of meningeal and brain infections through middle-ear diseases, operated upon and cured, and a vast deal of information in regard to brain surgery has resulted therefrom, yet I do not feel that with the few symptoms I had in my case I would have been justified in opening the temporal bone in hopes of finding a pus cavity.

The only symptoms of localization that developed at all before death were during the operation we noticed a mild right-sided facial paralysis, slight flexion of the fingers of the right hand, some fibrillary twitching of the muscles of the right hand, and slight ptosis; pupils reacted to light, but were dilated *ad maximum* just before death, beginning first in the right side; optic nerve healthy on the 20th. There were no signal symptoms either of motor or sensory character. The mental disturbance previous to his last illness might suggest a primary brain tumor, but the constant headaches, optic neuritis, vomiting, giddiness, and signs of central motor disturbance were wanting, though we know that brain tumors may occur or exist without special symptoms, in the temporal, parieto-occipital, and occipital lobes, while tumors of the pons and medulla have symptoms peculiar to themselves. I diagnosticated the case as one of acute leptomeningitis of the brain, basilar and unilateral, and extending toward the spinal meninges; the result of direct infection from the middle ear through the petrous portion of the temporal bone, not complicating the mastoid, and hence the longitudinal and lateral sinuses were not affected—its peculiar type and rapid fatal result depending probably upon an individual peculiarity of the temporal bone.

It began as cortical and then became basilar, I think, as shown by lack of vomiting or optic symptoms and delirium, and later on development of slight ptosis, facial paralysis, with slight contraction of and then final complete dilatation of pupils, and the increased pulse and respiration at first, which later and near the end became almost normal, with rigidity and twitching of muscles late in the attack. I was not fortunate enough to obtain a post-mortem, yet I think if you will note the case and autopsy of a very similar case, reported in the *Archives of Otology* in 1889, June number, by Dr. Finlayson and Dr. Barr, of Glasgow, you will see how closely allied the pathological conditions must have been.

I will give some extracts from that case, which was an acute meningeal trouble following a chronic ear disease, when in my case both were acute.

Patient subject to fœtid discharge for eighteen years; five weeks before admission to the hospital, after picking the right ear, it became very painful and inflamed; he had pain in ear and occipital region, with slight giddiness and vomiting for several days; then the pain in head and back set in; a few days later, temperature 102° and 103° F.; pulse, 90; respiration, 36; intellect clear; slight paralysis of facial nerve on right side; no evidence of mastoid irritation; mild papillitis in left eye; right eye normal; temperature continued high; pupils equal and responded to light; slight tremor of right hand; intellect became dull; retraction of head varied; constipated; lapsed into coma; vomited; temperature went up to 104.2° F. three hours before death and he died in coma.

These symptoms correspond in the main so closely with my case that I will also cite some of the conditions found on post-mortem.

No thrombosis in the longitudinal or lateral sinuses; the vessels of the *pia mater*, especially the veins, were much engorged; fluid was found at base of brain; brain adherent near the right internal auditory meatus, where there was necrosis of bone; this was to the side of the pons and at the anterior extremity of right lobe of the cerebellum; the base of the brain presented extensive purulent inflammation; this process seemed to have extended from the spot where the pus oozed out on dissecting away the adhesion, toward the side of the medulla and to the inferior surface of the cerebellum, crossing over to the left side also; the purulent deposit extended about an inch both to the right and left of the middle of the cerebellum behind the medulla, on the right side of the cerebellum; in this situation a distinct membrane could be stripped off, having inflammatory products still visible on the pia mater; in this membrane, as stripped off, injected vessels could be seen. On dissecting up the medulla, so as to expose the fourth ventricle, some glutino-purulent exudate was found in both its anterior and posterior aspect. The examination of the petrous portion of the temporal bone was interesting; the tympanum was denuded of periosteum on inner lower and posterior outer walls, as in my case, except more extensive. As to mode of conveyance of infection and progress of the pathological conditions, I think this case gives a good insight into the case reported above.

In connection with this case, and by the consent of Dr. B. M. Baker, I will present a case of chronic suppurative otitis media, with mastoid complications, subperiosteal abscess, œdema of face and right side of head. Operation and cure in six weeks.

A. B., aged six years, has had discharge from the right ear for three months, following an attack of measles. When seen by me in consultation with Dr. B. there was discharge from both the right and left ears; tenderness and swelling over the right mastoid, and puffiness of the right side of face and head. I advised operation at once.

First cut of knife, Dr. B. operating, cut through thick œdematous tissue, but a second cut higher up, on a line with the upper rim of the auricle, let out about an ounce of offensive pus. By increasing the size of the wound and putting a finger in the opening a funnel-shaped, eroded surface was felt; this opened directly into the antrum, but the eroded cortex of mastoid and squamous extended over a surface at least an inch and a half long by one inch wide, axis looking upward and forward. After scraping away the rough bone the thin inner plate of the middle fossæ could be felt elastic to the fingers; the cortex of the mastoid was removed, and numerous little cells full of pus were evacuated. The communicating opening and surface were packed with iodoform gauze and the patient put on small doses of quinine and sodium bromide. The recovery was uninterrupted, and in four to six weeks the child seemed perfectly well and the discharge has stopped in both ears.

35 Granby Street.

Therapeutical Notes.

Ichthyol in Gastro-intestinal Diseases.—Lange (*Allgemeine medicinische Central-Zeitung*, 1897, No. 3; *Centralblatt für innere Medicin*, September 4, 1897) gives pills of a grain and a half of ichthyol every hour or two in all severe cases of acute intestinal catarrh, also in all cases of chronic catarrh of the rectum and hæmorrhoids in which there is a great tendency to tympanites with foul evacuations. The treatment is very efficacious, and he has never known it to give rise to anything worse than eructations.

Cacodylic Acid in the Treatment of Psoriasis.—Danlos, according to Maurange (*Gazette hebdomadaire de médecine et de chirurgie*, September 5, 1897), has given up the subcutaneous use of this drug, and now employs it internally in the form of a pill or a mixture, as follows:

1. ℞ Cacodylic acid	0.75 of a grain;
Extract of gentian	1.50 grain.

M. For one pill.

S.: From two to ten or twelve such pills to be taken in the course of a day.

2. ℞ Sodium cacodylate	38 grains;
Rum, } each	300 "
Syrup, }	
Distilled water	900 "
Essence of mint	2 drops.

M. S.: From two to six teaspoonfuls a day.

Cacodylic acid, or dimethylated arsenic acid, although containing nearly as much metallic arsenic as arsenous acid does, is said not to be poisonous, but perhaps the statement is to be taken as applying only to medicinal doses.

A Liniment for Hyperidrosis of the Feet and for Abrasions from Ill-fitting Shoes.—The *Progrès médical* for September 11th gives the following formula:

℞ Commercial soft soap	52 parts;
Water	27 "
Vaseline	15 "
Zinc oxide	6 "
Essence of lavender	a sufficiency.

M.

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THE YONKERS EXPERIENCE WITH PASTEURIZED AND MODIFIED MILK.

THE problem of feeding with nutritious and inoffensive milk those infants who are so unfortunate as to be deprived of breast milk is one that is constantly before the medical profession and the community. Year after year the fatal diseases entailed by the use of milk unsuitable for the purpose swell the mortality among young children. More than all the ravages of the exanthematous fevers are those of infantile diarrhœal diseases a potent factor in the destruction of infant life. Few subjects, if any, are, therefore, more important than that of providing proper milk for the sustenance of artificially fed children, and seldom, if ever, has it been more forcibly and convincingly presented than in Dr. Getty's article entitled Pasteurized Milk as Dispensed in Yonkers, and a Study of the Effect on Infant Mortality, read before the Society of Alumni of Bellevue Hospital on June 2d and published in this number of the *Journal*, together with the interesting discussion to which it gave rise.

Dr. Getty very properly alludes to a prevalent misconception as to just what is to be expected of pasteurized and modified milk. It is not meant as a cure for actual disease, except in so far as its nutrient value is enhanced by "modification," but as a preventive. "If," says Dr. Getty, "a child has been fed on some other food and is suffering from infection produced by it, it is the height of folly to give milk of any description to it until we have first cleaned out the entire digestive tract, and have allowed time enough to elapse for the destruction of the harmful bacteria contained in it. The most sterile milk would become infected if we gave it before taking these precautions —it would simply be adding fuel to the fire." In this he is undoubtedly quite correct.

We can not refrain from quoting another passage from Dr. Getty's article, so vividly does it present the absolute gloomy truth: "As a rule, whenever a child cries it is the signal for the mother to feed it, as she imagines the child is hungry, when it is crying because of a stomach ache; then the amount given at one feeding is often twice the amount that is necessary. As a result of these errors there is a catarrhal condition of the mucous membrane, and the child is in a condition to be unfavorably affected by any infected food. If the child is fed on milk, it has come in nine cases out of ten from the corner grocery, and the milk is from twenty-four to forty-eight hours old, and has been standing in the heated store exposed to contamination and dust of all kinds, and then the mother keeps it in an unclean vessel, and by the time the poor baby receives it the milk is swarming with germs, and instead of being a food acts as a poison, just as much so as arsenic or strychnine."

It is not alone with the lack of knowledge on the part of the mothers that one has to contend in any scheme for furnishing the babies with proper milk; the dense ignorance, incredulity, and "'twas-always-good-enough-for-us" spirit shown by milk producers is a rock that has to be blasted away. We can well imagine, therefore, the pains that the promoters of the Yonkers enterprise had to take before they could feel sure that their rigid requirements were really carried out. Then there was the machinery of distribution to be arranged, and in this matter we do not see how better devices could well have been hit upon than that of having the milk on sale at all hours at the apothecaries' shops, as was done in this instance.

Too much praise can not be given to Mr. Straus for the benevolence and energy he has shown in providing sterilized milk for the poor at a low price. As Dr. Getty says, "Would that there were more men like him."

METRORRHAGIA AND MARRIAGE.

THE *Gazette de gynécologie* for September 15th remarks that when a young girl is the subject of persistent uterine hæmorrhage it is customary to discountenance her marrying until the cessation of her trouble is more or less assured. But our contemporary cites a paradoxical case, reported by M. Eustache in the *Journal des sciences médicales de Lille*, in which marriage seems to have transformed a rebellious metrorrhagia into a no less stubborn amenorrhœa. The girl, to be sure, was hysterical. For nearly five years she had suffered from a bloody flow for the cure of which the whole gamut of tonics and hæmostatics, curetting, replacement of the uterus, dilatation, intra-uterine tamponing, and even hypnotic suggestion had been tried in vain. For a number of months recourse was had to columnization of the vagina. She was hardly able to be out of bed for an hour or two daily when, unknown to the rest of the world, she and her mother accepted for her an offer of marriage. During the term of her engagement her physician practised columnization of the vagina every three days, in order to enable her to sit up longer, to go and come, and thus to make a good appearance in the presence of her betrothed, who had not been taken into the secret.

On her wedding day the situation had not changed, but on the day after it the hæmorrhage had ceased. The cessation was complete, and it lasted for three months, so that everybody supposed the woman was pregnant. But on the ninety-second day the menses reappeared copiously and with pain, so that the family and the physician himself cherished the delusion of an abortion, although there was no fœtus to show for it. At the end of four days the hæmorrhage ceased spontaneously. For two years after that, up to the time of the report, there was no further hæmorrhage. To an absolutely continuous metrorrhagia of three years' duration there had succeeded an amenorrhœa none the less complete, which threatened to remain permanent, although the woman's general health seemed in no wise affected, since she had regained her color and flesh in spite of the persistence of the hysterical temperament. For more than six months her attending physician, who had exhausted in her case the whole list of hæmostatics, was running no less assiduously the gamut of emmenagogues without their appearing to be at all more efficacious than the hæmostatics had been.

MINOR PARAGRAPHS.

PSEUDOXANTHOMA ELASTICUM.

Under this name J. Darier (*Monatshefte für praktische Dermatologie*, 1896, No. 12; *Centralblatt für Chirurgie*, September 11, 1897) describes a case, similar to two others which he has found recorded in literature, of what appears to be a peculiar skin disease of unknown nature. The lesions, which are macular or papular, resemble those of xanthoma, but they are situated almost exclusively on the flexures of the joints and are accompanied by loss of the elasticity of the skin. Histologically, they are characterized by a breaking down of the elastic fibres, elastorrhexis; there are no characteristic xanthoma cells present. The disease is observed in both children and adults, after infections or intoxications, and is classed by the author among the idiopathic atrophies of the skin.

SPORADIC INFLUENZA.

Lindenthal (*Wiener medicinische Wochenschrift*, 1897, No. 15; *Gazette hebdomadaire de médecine et de chirurgie*, September 5, 1897), on the strength of post-mortem bacteriological examinations in eight cases of sporadic influenza, lays down the following conclusions: 1. There is a form of influenza observed apart from epidemics, possessing the same anatomical and bacteriological characteristics as the epidemic disease. 2. In pneumonia due to influenza the exudate is not always purulent; there are cases in which it is fibrinous, serous, or hæmorrhagic. 3. The inflammations of the sinuses of the face which are frequent in the course of influenza are almost always produced by the bacillus of that disease; pneumococci and other pyogenic micro-organisms, which are often met with, are usually the result of a secondary infection. 4. The bacilli of influenza, the dimensions of which vary according to the case, may be recognized by the following characters: They are decolorized by the Gram process, they can be cultivated only on a medium containing hæmoglobin, and they do not develop at the ordinary temperature or in the absence of oxygen. At the outset the colonies are hemispherical, vitreous, homogeneous, and transparent, but after a time they become flattened, bluish, and opaque, they attain a diameter of from four to five millimetres, and their centre becomes granular.

OREXINE AS A REMEDY.

Sconamiglio (*Wiener medicinische Blätter*, 1897, No. 25; *Centralblatt für innere Medicin*, September 11, 1897) reports on an extensive use of orexine. It seems that the chloride is to some extent objectionable, for in five out of thirty-two cases it gave rise to unpleasant symptoms, such as vomiting and severe burning in the stomach. The alkaloid itself, however, appears not to be open to this objection; it was prescribed in seventy cases, and there was no unfavorable symptom produced by it. Out of fifteen patients with anæmia, ten were cured and three improved; out of ten with chlorosis, seven were cured; out of twenty-five with atony of the stomach, seventeen were cured and six improved. In a collection of cases including ten of nervous dyspepsia, fifteen of neuroses, and ten of chronic gastric catarrh a cure was effected in seventy per cent. The alkaloid was given in daily amounts of from four to seven grains, in the form of "oblates." In cases of pulmonary tuberculosis the appetite and the general condition were strikingly improved. In the vomiting of pregnancy the results are described as bordering on the marvelous; in five cases the action of the remedy was uncommonly rapid, and in some of them it is said to have been lifesaving.

HYPNOTISM AS A CAUSE OF DISEASE.

The danger of amateur hypnotism is well shown by a case mentioned by Desplats (*Journal des sciences médicales de Lille*, July 10, 1897; *Gazette médicale de Nantes*, September 11, 1897), that of a baker's apprentice who was put to sleep daily by a physician, for his amusement. The lad became hysterical and had grave crises with attacks of ambulatory automatism. The most varied impressions, the sight of a brilliant object or of a person or hearing a sound, would put him to sleep. He became a veritable automaton, psychically infirm.

ABNORMAL SHORTNESS OF THE UMBILICAL CORD.

Königstein (*Wiener medicinische Blätter*, 1897, No. 19; *Centralblatt für Gynäkologie*, September 11, 1897) records a case of ante-partum hæmorrhage occurring in consequence of detachment of the placenta. The funis was only about fourteen inches long. He reports another case in which the second child of a pair of twins presented transversely and was turned and extracted. The funis of the first child was only a little over eleven inches long, and that of the second one fourteen inches. The funis of the first had to be cut at once at a point less than an inch from the vulva.

THE "CLING SYMPTOM" OF FÆCAL ACCUMULATION.

UNDER the name of "Klebesymptom," which seems fairly translatable into cling symptom, Gersung (*Wiener klinische Wochenschrift*, 1896, No. 40) describes this symptom: When intense pressure is made with the finger upon the tumorlike mass, the intestinal mucous membrane clings for the time being to the depression made on its surface, and may subsequently be felt to release itself. Siefert, who made the abstract of Gersung's article for the Steptember 4th number of the *Centralblatt für innere Medicin*, thinks that the author's cases were peculiar in being characterized by hypertrophy of the large intestine.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THE first day's attendance at the twenty-third annual meeting, in Louisville, after receiving news of which the *Journal* went to press, was large, and it was representative of a far larger area than that of the Mississippi Valley strictly so called; indeed, the number present from the East was such as to show that the association's title is not interpreted rigidly. The address of the president, Dr. Thomas Hunt Stucky, of Louisville, was excellent, as was to be expected. An exceedingly graceful act, partly in accordance with suggestions, but largely prompted by their own magnanimity and sense of justice, was that of a number of Indiana physicians present at the meeting—that of sending a message to the governor of Indiana to the effect that, in their opinion, the Indiana quarantine proposed against Louisville was wholly unnecessary. An opinion in which we quite agree.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 5, 1897:

DISEASES.	Week ending Sept. 28.		Week ending Oct. 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	40	5	30	8
Scarlet fever	69	3	87	6
Cerebro-spinal meningitis	0	0	0	1
Measles	21	0	64	1
Diphtheria	131	25	134	35
Croup	1	2	7	3
Tuberculosis	185	107	158	113

Marine-Hospital Service Health Reports.—The following statistics concerning yellow fever, small-pox, and plague were received in the office of the Marine-Hospital Service during the week ending October 2, 1897:

Yellow Fever—United States.

Mobile, Ala.	Sept. 24–Oct. 1	40 cases,	6 deaths.
New Orleans, La.	Sept. 25–Oct. 1	160 "	15 "
Biloxi, Miss.	Sept. 25–Oct. 1	117 "	3 "
Edwards, Miss.	Sept 25–Oct. 1	126 "	4 "
McHenry, Miss	Sept. 30–Oct. 1	4 "	
Ocean Springs, Miss.	Sept. 25–Oct. 1	5 "	1 death.
Perkinston, Miss.	Sept. 10	1 case.	
Scranton, Miss.	Sept. 26–29	11 cases,	3 deaths.

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Aug. 21–28	1 case.	
Cardenas, Cuba	Sept. 4–11		1 death.
Cienfuegos, Cuba	Sept. 5–19		16 deaths.
Havana, Cuba	Sept. 16–23		23 "
Matanzas, Cuba	Sept. 8–22		3 "
Panama, U. S. of Colombia	Sept. 10–13	2 cases.	
Bombay, India	Aug. 17–31		193 "
Calcutta, India	Aug. 7–21		9 "
Madras, India	Aug 21–27		7 "
Singapore, India	July 1–31		1 death.
Kanagawa, Japan	Aug. 24–Sept. 2	1 case,	1 "
Osaka and Hiogo, Japan	Aug. 21–28	1 "	
Tokyo, Japan	Aug. 24–Sept. 2	14 cases,	5 deaths.

Plague—Foreign.

Bombay, India	Aug. 17–24		13 deaths.

Small-pox—United States.

Birmingham, Ala.	Sept. 18–25	2 cases.	

Small-pox—Foreign.

Athens, Greece	July 1–31	4 cases.	
Glasgow, Scotland	Sept. 4–11		1 death.
Alexandria, Egypt	July 23–Aug. 12		4 deaths.
Havana, Cuba	Sept. 16–23		1 death.
Rio de Janeiro, Brazil	Aug. 21–28	9 "	1 "
Brussels, Belgium	Aug. 28–Sept. 4		1 "
Cairo, Egypt	July 23–Aug. 12		8 deaths.
Hong Kong, China	Aug. 1–14		3 "
Paris, France	Aug. 29–Sept. 11		4 "
Madrid, Spain	Sept. 1–7		2 "
Warsaw, Russia	Aug. 28–Sept. 11		15 "
St. Petersburg, Russia	Sept. 4–11	4 "	
Madras, India	Aug. 21–27		3 "
Calcutta, India	Aug. 14–21		1 death.
Bombay, India	Aug. 24–31		1 "
Prague, Bohemia	Sept. 4–11	2 "	

The New York State Medical Association.—The annual meeting will be held in the Mott Memorial Hall, No. 64 Madison Avenue, on October 12th, 13th, and 14th. On Tuesday evening, the 12th inst., Dr. Charles Phelps, the president, will deliver an address on The Causes of a Decline in the Average Income of General Practitioners of Medicine.

A New Surgeon General for the Navy.—It is announced that Medical Director Newton L. Bates has been appointed surgeon general of the navy.

Changes of Address.—Dr. John E. Weeks, to No. 46 East Fifty-seventh Street, New York; Dr. John Aldrich, to 106 West Eighty-first Street, New York; Dr. William B. Coley, to No. 5 Park Avenue, New York; Dr. Achilles Rose, to No 126 East Twenty-ninth Street, New York; Dr. D. Ernest Walker, to No. 240 West Forty-sixth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 26 to October 2, 1897:*

BYRNE, CHARLES B., Major and Surgeon, is relieved from duty at Fort Snelling, Minnesota, and ordered to Plattsburg Barracks, N. Y., for duty.

GIBSON, ROBERT J., Captain and Assistant Surgeon, is ordered to report to the president of the examining board at the surgeon general's office, Washington, D. C., October 4th, for examination for promotion.

HARVEY, PHILIP F., Major and Surgeon, is ordered to Fort Snelling, Minnesota, for duty on being relieved from duty at Plattsburg Barracks, N. Y.

LEWIS, WILLIAM F., First Lieutenant and Assistant Surgeon. The order directing him to report for duty at Fort McPherson, Georgia, is amended so as to direct him to report for duty at the new post on Sullivan's Island, South Carolina.

POINDEXTER, JEFFERSON D., Captain and Assistant Surgeon, is ordered to temporary duty as attending surgeon and examiner of recruits in New York city, relieving RICHARD, CHARLES, Captain and Assistant Surgeon, who is ordered to Fort Monroe, Virginia, for duty.

Stiles, Henry R., First Lieutenant and Assistant Surgeon, is ordered to report to the president of the examining board at Washington, D. C., October 18th, for examination for promotion.

A board of officers to consist of Greenleaf, Charles R., Colonel and Assistant Surgeon General; Moseley, Edward B., Major and Surgeon; and Frick, Euclid B., Captain and Assistant Surgeon, is appointed to meet at headquarters, Department of California, San Francisco, California, on Monday, October 25th, for examination for promotion of officers of the medical department.

Straub, Paul F., Captain and Assistant Surgeon, is ordered to report to the president of the examining board, San Francisco, October 25th, for examination for promotion.

A board of officers to consist of Tilton, Henry R., Lieutenant Colonel and Deputy Surgeon General; Borden, William C., Captain and Assistant Surgeon; and Shaw, Henry A., Captain and Assistant Surgeon, is appointed to meet at headquarters, Department of Dakota, St. Paul, Minnesota, on Monday, October 18th, for examination of medical officers for promotion.

Newgarden, George J., First Lieutenant and Assistant Surgeon, is ordered to report to the president of the examining board at St. Paul, Minnesota, on October 18th, for examination for promotion.

A board of officers to consist of Woodhull, Alfred A., Lieutenant Colonel and Deputy Surgeon General; Munn, Curtis E., Major and Surgeon; and Lippitt, William F., Jr., Captain and Assistant Surgeon, is appointed to meet at headquarters, Department of Colorado, Denver, Colorado, on Monday, October 18th, for the examination of medical officers for promotion.

Hallock, Harry M., First Lieutenant and Assistant Surgeon, is ordered to report to the president of the examining board at Denver, on October 18th, for examination for promotion.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending September 25, 1897.*

Wheeler, W. A., Surgeon. To proceed to St. Louis, Mo., and assume temporary command of service. September 20, 1897.

Bratton, W. D., Passed Assistant Surgeon. Relieved from waiting orders, and directed to proceed to Sabine Pass, Texas, for special duty. September 20, 1897.

Magruder, G. M., Passed Assistant Surgeon. When relieved by Passed Assistant Surgeon W. D. Bratton, to proceed to Galveston, Texas, and await orders. September 20, 1897.

Cobb, J. O., Passed Assistant Surgeon. To proceed to Cairo, Ill., for special duty. September 20, 1897.

Society Meetings for the Coming Week:

Monday, *October 11th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

Tuesday, *October 12th:* Tri-State Medical Society of Georgia, Alabama, and Tennessee (first day—Nashville); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Medical Societies of the Counties of Albany (semiannual), Chenango (triannual), Greene (semiannual—Cairo), Jefferson (quarterly—Watertown), Kings, Oneida (semiannual—Rome), Ontario (quarterly), Rensselaer, Schoharie (semiannual), and Tioga (Owego); Newark, N. J. (private), and Trenton, N. J., Medical Associations; Medical Association of Northern New York (annual—Malone); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Bergen, N. J., and Cumberland, N. J. (semiannual), County Medical Societies; Litchfield, Conn., County Medical Society; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Ky.; Richmond, Va., Academy of Medicine and Surgery.

Wednesday, *October 13th:* Tri-State Medical Society of Georgia, Alabama, and Tennessee (second day); New York Pathological Society; New York Surgical Society; Society of the Alumni of the City (Charity) Hospital; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis), N. Y.; Pittsfield, Mass., Medical Association (private); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), Middlesex South (Cambridge), and Plymouth (special), Mass., District Medical Societies; Philadelphia County Medical Society; Vermont State Medical Society (annual—Montpelier); Kansas City, Mo., Ophthalmological and Otological Society.

Thursday, *October 14th:* Tri-State Medical Society of Georgia, Alabama, and Tennessee (third day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *October 15th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society (annual).

Births, Marriages, and Deaths.

Married.

Brown—Buell.—In Milwaukee, on Wednesday, September 22d, Dr. John Ferguson Brown, of Soldier's Grove, Wisconsin, and Miss Florence E. Buell.

Cloud—Ritchie.—In Columbia, Mississippi, on Tuesday, September 28th, Dr. R. B. Cloud and Miss Candalie Ritchie.

Young—Scranton.—In Lafayette, Louisiana, on Thursday, September 30th, Dr. Roy A. Young and Miss Nita Scranton, daughter of Dr. George W. Scranton.

Died.

Craig.—In Williamsburg, N. Y., on Thursday, September 30th. Dr. Samuel J. Craig, aged twenty-six years.

Saunders.—In Carolina, Rhode Island, on Saturday, October 2d, Dr. Albert Ainsworth Saunders, aged sixty-four years.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of June 2, 1897.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

A Case of Consecutive Tubal Pregnancy with Rupture in Each Tube within Fourteen Months.—Dr. John F. Erdmann reported a case of this kind. (See page 496.)

Pasteurized Milk as dispensed in Yonkers, and a Study of the Effect on Infant Mortality.—Dr. S. E. Getty, of Yonkers, read a paper with this title. (See page 484.)

Dr. Joseph E. Winters congratulated the reader of the paper, not only upon the results obtained, but upon the very clear manner in which the matter had been presented. He said that his experience had impressed him with the fact that it was impossible to keep milk and barley water that had been mixed, and sterilized or pasteurized, for any considerable time without undergoing some change. He was inclined to think that the reason why many of the children fed on the milk from the Straus depots had had digestive troubles was that the milk had been mixed with barley water—at any rate, by simply directing the discontinuance of this mixture, and giving simple directions regarding the feeding, the digestive trouble had disappeared. He thought that it was a mistake to mix milk and barley water at the laboratory, on account of the proneness of such a mixture to undergo fermentation in hot weather. No mention had been made this evening regarding the method pursued for detecting a diseased condition of the udders of the cows—a very important matter. It was well known that cows suffered from scarlatina as do human beings, and that the principal source of scarlet fever, when originating in the milk supply, was from the cows themselves. This source of scarlatina should be eliminated by having the dairies and animals inspected, not by veterinarians, but by competent medical men. It was also important that the water supply used both for watering the cattle and for washing the milk bottles and other utensils should be carefully examined and its purity guaranteed. Regarding pasteurization, the speaker said that it was now known that bacteria were destroyed by a temperature of 148°, or a little over, and that, therefore, there was no necessity for raising the milk to 212° F., and so impairing its nutritious properties. This observation, he believed, had first been made by Professor Leeds, of Hoboken. So-called pasteurization at home in private practice was usually nothing more than sterilization. It was not probable that after the cream had been separated from the milk by centrifugal force it could be again mixed with milk, and produce a milk of the same quality as before. In some parts of England the milk was placed in a glass receptacle with a tap at the bottom, so that the portion of the milk containing a good deal of casein could be drawn off, leaving the upper part rich in cream and poor in casein. Such a milk could be modified so as to approximate human milk very readily. Another question to be considered in this connection was the fact that the success obtained by Dr. Getty and others in this field was likely to lead mothers to abstain from nursing their babies. Nothing could take the place of good breast milk, and hence physicians should embrace every opportunity to insist upon mothers nursing their infants whenever this was possible. A woman who was not willing to nurse her baby when she had a sufficient supply of milk was not a fit woman to be a mother. It was a very common thing now for women to talk over the matter of artificial feeding long before the birth of the baby.

Dr. **Rowland G. Freeman** said that after listening to a paper like the one just read it was hard to believe that there was nothing actually curative in pasteurized milk. Some of the sick children had been brought down to the Straus milk depots at the docks, and there the combined action of clean food and fresh air, without any medicine, had, in many instances, accomplished more than all the previous medical treatment. Where such a milk was widely distributed it should have a marked effect on the death-rate. The Straus milk depots were first started in the summer of 1893, but during this first season only a small quantity of milk was distributed. Omitting this year, therefore, from the statistics, and considering only the months of July and August (these being the only months in which much pasteurized milk was distributed) in the three previous and the three following years, it certainly seemed as though the pasteurized milk had helped to lower the death-rate. Thus, while there had been an increase in the total death-rate during the last three years of 2,330, there had been an actual diminution of the deaths in children under five years of age of 370. Again, the deaths from diarrhœal diseases, instead of increasing as they should have done, had been reduced by 860.

He did not think the trouble with the barley water was likely to be due to bacterial growth, as in the Straus laboratories the barley water was subjected to the same high temperature as the milk. The trouble was more likely something inherent in the barley itself. It was very easy to pasteurize milk at home. When this was done, it was safe to pasteurize the milk at a temperature lower than 167° F. A temperature of 134.4° F. for thirty minutes was not enough to change the taste of the milk, but was ample to destroy the typhoid and tubercle bacilli. A temperature of 134.4° F. for half an hour seemed to be desirable.

Dr. **W. H. Sherman**, of Yonkers, said that he was one of the physicians in Yonkers who had had an opportunity of watching the results of the use of this milk in practice. This experiment with milk had been carried on under very favorable circumstances, for, owing to the smallness of the city of Yonkers, Dr. Getty had been able to reach a much larger proportion of the population than would have been possible in larger cities. For the same reason, he had been able to get at the results and the causes of death more exactly than would have been possible in a larger city. We were all aware of the many inaccuracies in death certificates. In the comparison of the cities given in the paper the selection seemed to him very fortunate. These three cities were sufficiently near together to be affected by any changes of climate. If there were any advantage it would be in the case of Newburg, which was situated in a much more mountainous country, where the humidity was less than in the other places. Notwithstanding this fact, the death-rate in Yonkers had been reduced to a point less than that in Newburg.

In Yonkers pure milk had been dispensed to the people at a price less than that for which ordinary milk could be bought at the stores. It had also been dispensed in a form which made it easier, as well as cheaper, for the people to use it for the children. These were important factors in securing the establishment of the milk dispensary. The people had now been sufficiently educated to appreciate its advantages, and already the mothers were aware of the fact that children fed with this milk were not so sickly as other children. Among the children in his practice who had been fed on this milk last summer not one had had cholera infantum. It was important to remember that not a single death had occurred among the children in Yonkers who had been fed on this milk regularly from a time prior to taking sick. It seemed to him that it was a fair question to raise, as to whether the good results had been due to the unusually good quality of the milk or to its pasteurization. When one considered the harsh treatment which the milk often received—as, for instance, the placing of the whole day's supply of milk around the child in a baby carriage—it certainly seemed that the pasteurization was necessary and important. The practice had been to pasteurize the milk by an exposure of thirty minutes to a temperature of 167° F. It seemed to him that it would be a serious mistake to reduce the temperature at which the milk was pasteurized, for even now the milk could not be depended upon for more than twenty-four hours. He would be in favor even of a higher point for pasteurization. He had had a number of cases in which the barley water and milk, prepared at home, had not agreed with the children, yet all this trouble had disappeared as soon as the milk prepared at the milk dispensary with the barley water had been substituted. He had observed this even in wealthy families.

Dr. W. J. Chandler, of South Orange, asked what the reader of the paper understood by the term "modified milk." He thought, with Dr. Winters, that the addition of the barley water to the milk very greatly impaired its keeping qualities; he had found that in such a mixture the spores would develop within twenty-four hours, and for this reason he had been compelled to recommend that the barley water be made up twice in twenty-four hours. He also wished to ask whether the reader of the paper had implied that infants should be taken from the mother's breast and fed on pasteurized milk. In his opinion such a practice would be very reprehensible, and he would most heartily indorse the remarks made by Dr. Winters regarding the nursing of infants. In the Oranges they had probably the best dairy in the country. It was strictly supervised by a veterinarian, by a medical commission, and by Professor Leeds. The latter reported upon the quality of the milk twice a month. The price of the milk was rather high, but its excellent quality counterbalanced this objection. It was proposed this season to have the cows themselves placed in a sterile room, and there milked. It was also the practice there never to feed the cows before milking, because the scattering of hay about the stable raised a dust.

Dr. Winters said that he had not spoken disparagingly of dispensary milk, or said that the milk could not be properly pasteurized at home, but he had objected to giving a mixture of milk with a cereal to an infant under a year of age. No matter how sterile it was, it was wrong to add the cereal to the food for such a young infant. He did not believe it was possible for barley water to remain sterile for more than a few hours; it was certainly a dangerous food.

Dr. Getty said that all the drinking water supplied to the cows had been carefully analyzed. At first they had experienced a little difficulty with the barley water, but now they used a barley flour, which was mixed up very thoroughly and boiled for two or three hours. It was mixed with the milk the same day and pasteurized. Last year some of this mixture had been returned daily, and none of it had shown any sign of fermentation. The same could be said of the plain barley water which had been dispensed daily. Regarding the effect of the centrifugal machine on the character of the emulsion of fat in the cream, he said that a series of examinations had been made, and no difference had been detected between the centrifugal cream and the gravity cream as regards the fineness of the emulsion. By "modified milk" in Yonkers was meant equal parts of milk and distilled water, with a little limewater added to it to make it neutral or alkaline. Sugar of milk was also added to make the percentage six. For the wealthy patients a regular modified milk was prepared. He certainly was not in favor of taking an infant from the breast and putting it on the dispensary milk. About twenty-five per cent. of the women could not regularly nurse their infants, largely owing to the fact that the mothers must go out to work during the day.

New Inventions, etc.

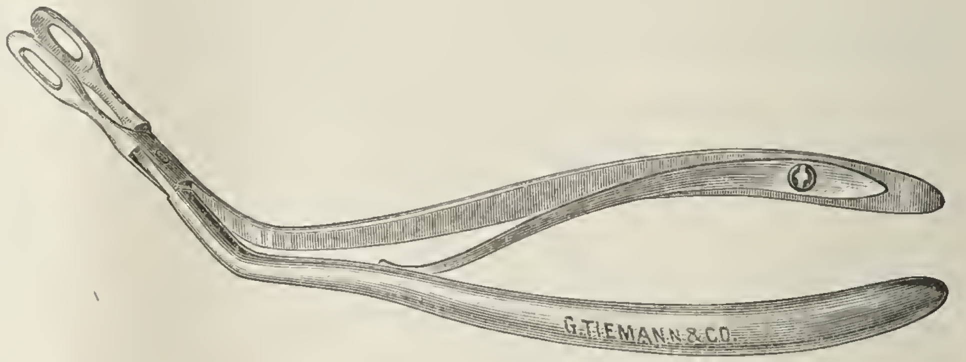
A NASAL CUTTING FORCEPS.

By John C. Lester, A. M., M. D.,

BROOKLYN,
FELLOW OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY;
FELLOW OF THE AMERICAN ACADEMY OF MEDICINE;
ASSISTANT SURGEON OF THE NEW YORK EYE AND EAR INFIRMARY;
ASSISTANT SURGEON TO THE ST. BARTHOLOMEW'S CLINIC FOR THE EYE, EAR, THROAT, AND NOSE;
MEMBER OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, ETC.

A more or less extended experience in the removal of portions of the middle turbinated body by means of the nasal snare, and an occasional failure with this method, led the writer to look for an instrument which could be relied upon in an emergency. An instrument, devised by Dr. Robert F. Weir, of New York, was found, which, in the hands of the writer, has proved particularly useful.

The instrument, represented in the drawing, is a modification of Dr. Weir's nasal forceps. The modifications consist in the fenestrated cutting ends, their increased size, and the enlarged angular handle. Dr. Weir's forceps, it will be remembered, consists of a straight, narrow scissors handle, which completely obstructs the view of the operator.



The increased size and depth of the cutting ends of the modified forceps, the fenestrations, and the strength of the handle make it possible for the surgeon to remove the entire middle turbinated body, or any portion of it, with an entirely unobstructed view of the field of operation.

The writer has also found this forceps exceedingly valuable in removing large nasal polypi, especially those attached to the middle turbinated body. In these cases it has been possible to remove not only the polypi, but also that portion of the turbinated bone to which the polypi are attached.

This instrument is not intended to supplant the use of the nasal snare; for, in the judgment of the writer, although there is no method which requires a greater amount of skill and dexterity on the part of the surgeon, there is certainly no method accompanied with more satisfactory results than the use of the ordinary nasal snare in the removal of a hypertrophied middle turbinated bone. There are, however, cases of sclerosed middle turbinated bodies which, having ran the gantlet of the "scorching" process, are still a source of discomfort to the patient. It is in this class of cases that a device of the kind under discussion is valuable.

Of course, an instrument so powerful must be used with extreme caution to avoid undue laceration of the tissues, as well as the removal of a greater portion of the turbinated body than may be desirable. The exercise of ordinary care will, however, obviate any such untoward result.

The forceps is made by Messrs. Tiemann & Co., of New York, and is up to their usual standard of excellence.

179 Schermerhorn Street.

Miscellany.

Thyreoid Treatment as a Means of Consolidation in Fracture.—Gabriel Gauthier (*Lyon médical*, June 27 and July 11, 1897; *British Medical Journal*, September 18, 1897) has been led by the remarkable effect of thyreoid medication in cases of disordered nutrition of osseous tissue (myxœdema, rickets, etc.) to try the same treatment in cases of retarded consolidation of fractures. Hanau and Steinlein (Frankfort Congress, 1895) had observed that in thyreoidectomized dogs in which experimental fractures were made repair was notably delayed, and callus was formed in less amount than in healthy animals, and they threw out the suggestion that ingestion of thyreoid gland might be used by surgeons to promote the formation of callus. Gauthier gives his experience of the mode of treatment in two cases: 1. A strong, healthy country girl, aged fifteen, broke her left leg in the lower third. The fracture was simple, with overriding of the fragments, which were easily reduced. The limb was put up in plaster of Paris. Union did not take place, in spite of the administration of phosphate of calcium, rubbing of the ends of the fragments, etc. When a hundred and ten days had elapsed without consolidation taking place, Gauthier prepared from the thyreoids of young sheep a glycerinated juice, a teaspoonful of which represented about fifteen grains of thyreoid substance. Of this the patient took from six to ten teaspoonfuls a day. During the first two or three days she complained of intense headache, flushing of the face, giddiness, and a feeling of suffocation, but a fortnight after the beginning of the treatment the fracture was consolidated, and a month later she could walk about as well as ever. Careful palpation failed to reveal any abnormity in the thyreoid gland. The total amount of thyreoid substance taken was eighteen hundred grains. 2. A healthy man, aged forty-eight, suffered a fracture of the radius. The limb was put up in plaster. After three months there was no consolidation. Thyreoid treatment was begun, and continued for between three and four weeks, the total amount of active thyreoid substance taken being about twenty-four hundred grains. Consolidation was then established. In this case, too, the thyreoid gland was, so far as could be made out, perfectly normal. Gauthier, while admitting that two cases are insufficient to prove the value of the treatment, thinks the results in the cases which he records suggestive and encouraging. He adds that whenever thyreoid treatment is employed the practitioner will do well, whenever possible, to extract the thyreoid himself instead of leaving it to the butcher to do so. Young sheep should be chosen for the purpose. That animal has two thyreoids; hence two incisions should be made, one on each side of the trachea. If a median incision is made, especially in a very young animal, the operator is likely to take the thymus instead of the thyreoid.

The Dilatation Treatment of Urethral Stricture.—Mr. A. A. Warden, of the Hertford British Hospital, Paris, contributes a most interesting article to the September number of the *Glasgow Medical Journal*, based on the practice at Professor Guyon's clinic at the Necker Hospital. The results of dilatation, he says, depend solely upon the effect of the contact of the instrument on the urethral wall, and are independent of any force or pressure that may unwisely be employed, for the action of this method is not a mechanical but a dynamic one. The instrument must pass the stricture with ease, and must not be rammed home or in any way force the walls of the stricture apart. It can not be too often repeated that *it is the contact which sets in play the organic processes necessary to the transformation of the pathological tissue.*

This has been known as a clinical fact for many years. Desault, Chopart, Dupuytren, all knew that a stricture could be modified even when no instrument had been passed through it. Even *cathétérisme appuyé*, or the mere application of an instrument against the stricture, will modify the tissues throughout their extent, and make a previously impermeable stricture easily traversible by a filiform bougie, a method of dilatation that Dupuytren termed "vital" as compared with the "mechanical" effect of the complete passage of a sound or bougie. That its action, however, is *not* mechanical, says the author, is proved by the following familiar fact: Almost daily in the wards may be seen patients with hard, tight, difficult strictures through which a small bougie has been passed and tied in for two, three, or four days. At the end of that time the bougie, which was so small as to have been introduced with ease, is withdrawn, and a sensible increase in the diameter of the strictured urethra is noticed—an increase quite out of proportion to the size of the dilating agent. Even before the bougie is removed one may note the freer play it enjoys, the easier passage of urine between it and the wall of the canal, and the patient himself, within forty-eight hours, will express his satisfaction and relief. The introduction of larger bougies will prove that one or two millimetres at least have been gained, sometimes very much more. This happy result, however, must not deceive one into the belief that a complete cure is at hand, for it is as transitory as it has been rapidly attained. But its significance is plain, that the changes are due to the contact alone without any pressure whatsoever. And from this method—strange as it may appear to reason, familiar, however, to clinical observation—are obtained the best results and the most rapid dilatation.

If a large instrument is used, one that has with difficulty and some pressure been passed through the stricture—a method recommended by John Hunter—the risk of urethral ulcerations, of abscesses, and of urinary infiltration and death is incurred. An instrument which exercises a prolonged pressure upon the walls of the urethra should never be used. Even temporary strong pressure is not advisable, and the urethra is always more resistant and more intolerant of instrumentation following such a procedure. It may be followed by retention or, if the urethra is torn, the gravest consequences. The operation, in a word, will not have been a dilatation but a clumsily lacerated internal urethrotomy.

Moderate and repeated pressure, on the contrary, undoubtedly dilates strictures by modifying the tissues that enter into their formation. We may doubt the permanence of the goodness of the result, says Mr. Warden, but we can not deny the facts of clinical evidence; and it is interesting to note to what extent clinical research can explain the action of this repeated moderate pressure. The constant and inevitable effect of the passage of a bougie in a strictured urethra is "a local reaction, more or less lasting, more or less serious, which passes off, and either gives place to an increase in size of the canal or ends in a difficulty or even complete temporary inability to pass water." Only after these first effects does the real enlargement and dilatation begin.

This chain of events may be observed all through the course of treatment, and is the more pronounced the greater the pressure exerted.

The therapeutic rule, therefore, so to speak, to be applied to intra-urethral pressure is that the "doses" must not be too large nor must they be too frequently administered; *i. e.*, instruments must not be introduced with too much force, too many at a time, or too frequently.

As carefully find out all that happens to your patient between the *séances* of treatment as you note the details of your own examination, says Mr. Warden, and you will be struck with the relatively greater effect of "small doses," *i. e.*, of gentle pressure, of sittings that do not last long and are only upon alternate days. Your conclusion, then, will be, what it has been the object of this paper to show, that "the mere passage of bougies without friction and for but a short period suffices to obtain the regular dilatation of most strictures." Be sure only that at the beginning of each sitting you commence with a smaller size than that last passed. For this race is never to the swift, and the deliberate tortoise is certain to overtake the impatient hare.

Conical olivary bougies, divided according to thirds of a millimetre in Charrière's scale, are the instruments to be used. Metallic bougies (Beniqué's) are scaled in sixths of a millimetre, and even for supple instruments a third is rather a jump, and it is often wise to choose the bougies which pass more or less easily through the same diameter. The olive-tip should be well formed, and must never be pointed. No matter how fine the bougie, its termination should be blunt and a little enlarged. At no stage of the treatment must we profit by the relative thinness of the conical extremity of an instrument to push the thicker part through; especially in difficult strictures must this rule be followed. Surprise the passage rather than force it. Advance and retire repeatedly, turning the bougie between your fingers until the absence of resistance at its tip tells you that you are on the right road. When the smallest bougies are necessary, try various forms, and most useful, perhaps, you will find those known as "bayonet," the form of which enables the point to leave the inferior wall and search all round the circumference of the urethra for the passage.

Metallic instruments are often suitable. The fine graduation of Beniqué's in sixths of a millimetre makes them eminently suitable for this method of dilatation. They may be fitted with a thread, to screw on to the conducting bougie devised by Maisonneuve, and may be introduced gently and safely, and thus, without breaking the rules formulated, one may obtain the same dilatation a little more rapidly than soft instruments could have effected. The curve that Beniqué gave to the instruments that bear his name, and their regularly cylindrical, rather than conical, form, make them the most suitable instruments for the purpose. Only if the stricture is penile, and at the same time unusually hard, thick, and extensive, need one prefer the straight metallic bougies from four inches to six inches long.

The less force is used the more certain are the results in the dilatation of stricture. The general rule should be to pass two soft bougies, differing by one third of a millimetre, or two to four metallic bougies, differing by one sixth of a millimetre, at a time; to leave them in but a minute or two, or even to withdraw them at once; to pass them not oftener than upon alternate days, and always to begin with a lower number. Thus, and thus only, will one successfully treat a dilatable stricture—that is to say, the great majority of strictures. If one has in hand a "bad" stricture, one may try "prolonged dilatation," but only with soft bougies that enter easily—with, indeed, a bougie that seems "too small." It is not, however, to reason that we must appeal for guidance, but to the formal dictation of clinical experience, and clinical experience shows us that it is the dynamical, not the mechanical, use of dilating instruments that will give us lastingly good results, without inconvenience and without danger to our patients. How the simple contact of instruments thus affects the whole tissue of the stricture is made clearer by the study of the pathology of inflammation and the knowledge of the effect of irritation in the transformation of living tissue. It would be absurd, of course, to suppose that we dispense entirely with the mechanical action; the mere fact that we make use of instruments proves it. But no mechanical force is used, because we know such would be useless and dangerous, and would determine pathological changes rather than what we might call the physiological action desired.

If all the resources of this method are fairly tried without achieving sufficient dilatation, there is but one resource—internal urethrotomy in one form or another.

Some Surgical Points in Diabetic Subjects.—This is the title of an article by Mr. R. H. Marten, of Adelaide, S. A., published in the *Australasian Medical Gazette* for August 20th. According to Dr. Prout, says Mr. Marten, persons with confirmed diabetes mellitus live, as it were, on the brink of a precipice. This is true not only in medical cases, but also in surgical injuries and diseases, and what would be in healthy subjects simple lesions become most serious among those persons who are passing sugar in their urine.

And according to Treves, "Diabetes offers an almost positive bar to any kind of operation, as wounds do badly, gangrene very readily follows an injury, and amputation is almost always fatal."

The author gives examples of wounds doing badly in diabetics. One case was that of an old lady who for seven years had been a diabetic, and who five months before had some hot fomentations applied to the abdomen for pain over the cæcum. Unfortunately, these produced blisters (three), each of about the size of a sixpence, and, although every possible attention was paid to them, instead of healing up as one would expect, they gradually increased in size and depth, and were now always covered with a superficial slough. She had been fairly hale and hearty before the blisters appeared, but the pain and worry of these lesions were rapidly wearing her out.

Another case was that of an old lady with a small traumatic ulcer on the front of her leg. This rapidly spread, and the patient died of acetonæmia in a few weeks, although previously she had had good health.

Another was that of an old lady of seventy-seven, who had suffered from diabetes for about four years. A small ulcer appeared between the right little toe and the adjacent toe, and the pain arising therefrom brought about a fairly rapid end.

A gentleman of fifty-five, who had had very marked diabetes for some years, accidentally scraped the skin off his shin, and produced an ulcer which spread, with sloughy edges and base, to an alarming extent. He was laid up in bed for several weeks and suffered intense pain; but by virtue of very careful nursing, dieting, and codeine pills the wound eventually healed.

Three of the author's patients have had biliary colic due to gallstones, and, although in ordinary cases an exploration of the gall bladder might have been suggested, no such treatment was undertaken, and one of these patients with a second attack of colic died very quickly of diabetic coma.

Two cases were head injuries. One patient, a confirmed diabetic, fell down and sustained a slight cut on his head. Within a few hours he began to show signs of diabetic coma, and died within three days.

Another was a gentleman who fell down the theatre steps, and from that time complained of thirst, loss of flesh, and attacks of giddiness. On examining his urine it was found to be highly saccharine, and has remained so ever since. The author can not say if this should be classed as a case of traumatic diabetes, as he never had an opportunity of examining his urine before his fall.

Two patients came complaining of troublesome boils, one on the cheek and the other on the head. Both had diabetes, and, although the boils have disappeared, their health is far from good.

One patient had an enormous carbuncle on his back, and he died of diabetic coma within a week. It is a question to the author's mind as to whether any surgical treatment should have been undertaken. He did no more than make a crucial incision, and he doubts very much if a carbuncle in a diabetic would stand much scraping and carbolizing.

One woman who was in the last stages of diabetes had at one and the same time three of the worst whitlows the author has ever seen, but they healed up before she died, although they left her hands absolutely crippled from extensive sloughing of tendons.

One of the most troublesome affections he has ever encountered has been balanitis in men. He has had three such cases, and says they try the patience of both the practitioner and the subject. The glans is covered with a superficial serpiginous ulceration, and the edges of the prepuce frequently crack and bleed. There is no doubt that the saccharine urine causes this, and the only way to get rid of it is to take special care to wash away all urine after micturition, and dry the part well and apply equal parts of olive oil and lanolin; but, as it always occurs in old men, generally with enlarged prostates, there is a troublesome dribbling of urine, which continues long after micturition is finished, and keeps up the irritation. One of the balanitis cases was in a man of forty-seven years, who had fractured his leg, and while lying up for his fracture was attacked with balanitis and eczema scroti; his urine was highly saccharine, but, strange to say, since he has been getting about again the sugar has disappeared, and with it the balanitis and eczema.

The author thinks that, whenever a man of over forty has balanitis, his urine should be examined for sugar, as is done with women suffering from pruritus vulvæ. He has had several patients with diabetic pruritus vulvæ, and has always recommended them to use the solution of hyposulphite of sodium, as recommended by Lawson Tait, but not always with the satisfactory result of which he speaks. Out of thirty-six men whom he has treated for diabetes, seven came complaining simply of loss of sexual power, and he feels certain that one can almost always date the onset of diabetes in men from this symptom alone, and their urine should always be examined for sugar. In two or three the power has completely returned, but in the remainder the loss is permanent.

With regard to the prognosis of these cases, he says, any lesion, be it ever so slight, in a diabetic subject is of extreme gravity. This is scarcely to be wondered at when it is considered how greatly the nutrition of the parts is affected. Out of sixty-seven diabetics, fifteen have had one or other of the above-mentioned surgical complications, and five died directly from the complication who otherwise might have lived for years.

With regard to treatment, the indication is to attack the diabetes on ordinary plans, and keep any wound as aseptic as possible; but the author is sure any practitioner who had had much to do with surgical lesions in such subjects must get tired of them before they have healed up.

The Saline Treatment of Constipation.—W. S. Bogoslowsky, from clinical observations on the action and value of a constant bitter water, draws the following conclusions (*Transactions* of the Moscow Section of the Society for the Preservation of Public Health, No. VI): Systematic treatment with Apenta water is especially indicated for constipation produced by atony of the bowels, and it has the advantage that its use does not give rise to subsequent constipation. Its action is more gentle than that of some other bitter waters because it contains less calcium sulphate and no magnesium chloride. It is probably owing to this circumstance that it does not cause crampy pains. The efficiency of Apenta as a remedy for the systematic treatment of obesity is clinically established.—*British Medical Journal.*

The Tri-State Medical Society of Georgia, Alabama, and Tennessee will hold its ninth annual meeting in Nashville on Tuesday, Wednesday, and Thursday, October 12th, 13th, and 14th, under the presidency of Dr. W. F. Westmoreland, of Atlanta, in addition to whose address, on Carcinoma of the Breast, the programme includes the following titles: Psychology, by Dr. J. B. Cowan, of Tullahoma, Tenn.; The True Physician—His Responsibilities—His Duty to his Profession and the People, by Dr. John C. LeGrand, of Anniston, Ala.; A Pessimistic and an Optimistic View of Medicine, by Dr. Y. L. Abernathy, of Hill City, Tenn.;

A Bouquet of Remedial Agencies, by Dr. John P. Stewart, of Attala, Ala.; The Treatment of Typhoid Fever, by Dr. John A. Larrabee, of Louisville; The Abortive Treatment of Grippe, by Dr. E. H. Richardson, of Atlanta; Electro-therapy in Medicine, by Dr. Louise Eleanor Smith, of Chattanooga; A New Mode of Internal Electro-therapy, by Dr. R. P. Johnson, of Chattanooga; Common Sore Throat, by Dr. James H. Atlee, of Chattanooga; Vaccination, by Dr. Seale Harris, of Union Springs, Ala.; The Pathology and Diagnosis of Early Phthisis, by Dr. Llewellyn P. Barbour, of Tullahoma, Tenn.; Sero-therapy in Tuberculosis, by Dr. Paul Paquin, of St. Louis; The Importance of the Early Recognition of Pleural Effusions due to Causes other than those located in the Pleuræ, by Dr. Louis H. Jones, of Atlanta; Abnormal Metabolism, by Dr. G. W. Drake, of Chattanooga; The Subject of Hæmatology, by Dr. E. C. Anderson, of Chattanooga; Inhibition, Physiological and Pathological, by Dr. J. F. Peavy, of Atmore, Ala.; The Rational Treatment of Cancer of the Uterus, by Dr. George Wiley Broome, of St. Louis; A Case of Fracture of the Skull followed by Basilar Hæmorrhage; Trephining; Recovery, by Dr. Curran Pope, of Louisville; The Relation of the Cause to the Immediate and Remote Results of Fracture, by Dr. R. M. Cunningham, of Birmingham, Ala.; Is Cancer Contagious? by Dr. E. Mather, of Paterson, N. J.; Stimulants and Narcotics in Obstetrics and Gynæcology, by Dr. R. R. Kime, of Atlanta; Surgical Shock, by Dr. Gilbert I. Cullen, of Cincinnati; Cystitis—Its Course and Treatment, by Dr. W. L. Nolen, of Chattanooga; Stricture of the Urethra and its Treatment, by Dr. W. R. Blue, of Louisville; Operative Treatment in Enlarged Prostate, by Dr. H. H. Grant, of Louisville; The Treatment of Chancroidal Ulcers, by Dr. A. R. Danforth, of Atlanta; Ablation of the Scrotum for Conditions other than Varicocele, by Dr. W. S. Goldsmith, of Atlanta; The Treatment of Cancer of the Rectum, by Dr. J. M. Mathews, of Louisville; Burns and Scalds, by Dr. G. A. Baxter, of Chattanooga; Metatarsalgia, or Morton's Painful Toe, by Dr. G. S. Brown, of Birmingham, Ala.; The Application of the Plaster Jacket and Dressings, by Dr. F. B. Sloan, of Cowan, Tenn.; The Surgery of the Stomach, by Dr. H. Berlin, of Chattanooga; Report of Operative Cases (Brain), by Dr. S. G. Courtney Pinckney, of Atlanta; Fracture of the Elbow, by Dr. B. G. Copeland, of Birmingham, Ala.; The Treatment of Fractured Maxillaries, by Dr. D. S. Arnold, of Atlanta; The After-treatment of Abdominal Operations, by Dr. Valentine Taliaferro, of Atlanta; Epiplocele, Report of a Case, by Dr. J. W. Griggs, of West Point, Ga.; Appendicitis, by Dr. G. Manning Ellis, of Chattanooga; The Evolution of the Treatment of the Stump in Operations for Appendicitis, by Dr. W. D. Haggard, Jr., of Nashville; Obstetrics, by Dr. W. G. Bogart, of Chattanooga; Some of the Mammoth Ovarian Tumors of Surgical History, by Dr. A. M. Cartledge, of Louisville; Cases of Ectopic Gestation operated on by the Vaginal Route, by Dr. W. E. B. Davis, of Birmingham, Ala.; The Technique in Hysterectomy for Uterine Myomata, by Dr. W. H. Wathen, of Louisville; Hysterectomy, by Dr. Louis Frank, of Louisville; Hysterectomy in the Treatment of Pelvic Diseases, by Dr. G. R. West, of Chattanooga; Flap Operation for Atresia Vaginæ, by Dr. G. H. Noble, of Atlanta; Meningitis in Children, by Dr. J. W. Russey, of Chattanooga; Mouth Breathing in Children, and its Dangers, by Dr. W. Cheatham, of Louisville; The Injurious Results of Incompetent Refraction Work, by Dr. Frank Sims, of Atlanta; The Causes, Diagnosis, and Prognosis of Valvular Diseases, by Dr. Hazle Padgett, of Columbia, Tenn.; Rheumatism as an Ætiological Factor in Cardiac Diseases, by Dr. S. W. Fain, of Chattanooga; The Treatment of General Peritonitis, by Dr. L. S. McMurtry, of Louisville; Asylum Reform from the Gynæcic Standpoint, by Dr. Charles A. L. Reed, of Cincinnati; The Pot Hunter in Surgery, by Dr. Joseph Price, of Philadelphia; Reports of Some Cases of Abdominal Surgery, by Dr. James M. Black, of Knoxville, Tenn.; Abscess of the Thigh and Pelvic Cavity, with Report of a Case, by Dr. B. P. Key, of Tracy City, Tenn.; How to Elevate the Profession in the Country, by Dr. T. S. Hughes, of Cohutta, Ga.; Various Treatments of Epithelioma, by Dr. M. B. Hutchins, of Atlanta; Posterior Urethritis, by Dr. R. H. Tatum, of Chattanooga; Stricture of the Nasal Duct, by Dr. B. F. Travis, of Chattanooga; Chloroform, by Dr. Cooper Holtzclaw, of Chattanooga; Cataract Operations, by Dr. James Moorse Ball, of St. Louis; An Original Method of Preparing Catgut for Ligatures and Sutures, by Dr. St. J. B. Graham, of Savannah; and Leukæmia, and the Report of a Case of Hodgkin's Disease, by Dr. A. W. Mardis, of Lebanon, Ohio.

Papers with titles not yet announced are expected from Dr. Hunter McGuire, of Richmond; Dr. J. B. Wells, of Stone Mountain, Ga.; Dr. William Warren Potter, of Buffalo; Dr. George Ben Johnson, of Richmond, Dr. Joseph A. White, of Richmond; and Dr. A. W. Calhoun, of Atlanta.

Eucaine Hypodermically as a Local Anæsthetic.—Mr. F. C. Wallis (*St. Bartholomew's Hospital Journal*, August, 1897; *Therapist*, September, 1897) says that he has used eucaine hypodermically for some months past, and the results have been most satisfactory. The following points seem to be those which are of practical importance:

1. The strength of the solution.
2. The preparation of the solution and the duration of its efficacy.
3. The amount injected.
4. The method of injection.
5. The extent of operation possible.
6. The after-effects.

He has used only one strength since he first began to use the drug, and that is a solution of four per cent. He has never seen any signs of toxic effects even when a considerable amount has been used—except in one doubtful case. This percentage, he says, is quite strong enough to produce absolute local anæsthesia for any small operation.

Eucaine is soluble to a limited extent and with great difficulty in cold water. It is quite soluble in hot or boiling water, and the drug can be sterilized by boiling without any alteration in its composition or effect, but, after the third day, it is as well to prepare a fresh solution, as it has not such a decided anæsthetic effect after this lapse of time.

The amount to be injected will, of course, depend upon the extent of the operation. He has, in a large ischio-rectal abscess, injected as much as three and a half to four drachms subcutaneously without any ill effects at all. The average amount required for a small operation is from a drachm to a drachm and a half of the four-per-cent. solution. But one of the great qualities this drug possesses is that the operator need not be at all nervous about using sufficient, and if the desired anæsthetic effect is not produced by a drachm, the second or third can be used with every confidence as to the safety of it.

The syringe should be one of those which have the needle to screw on the nozzle, to which a washer is attached. This is a matter of importance, because, if the needle is simply fixed on a smooth nozzle, it will be found in endermic injections that the fluid comes out where there is least resistance—namely, between the needle and the nozzle—especially when the tissues are inflamed, brawny, or cicatricial. The syringe and needle should be of such a kind that all parts of them can be thoroughly cleaned, and either sterilized or rendered aseptic by other methods. At St. Bartholomew's the needles and syringe are placed in a five-per-cent. solution of carbolic acid about an hour before the out-patient work is begun, and kept there, when not in use, the whole afternoon. The necessity for this will be obvious.

The method which the author pursues in the injection of the fluid is as follows: The patient is shown the needle and told that he will feel the first prick of it, and nothing else (this is nearly always, but not always, quite true). If the patient is not aware of what is happening and feels the prick of the needle, he is almost sure to jump away, and the process has to be repeated.

The first injection of about ten minims is made *into* the epidermis; after three or four seconds the needle is pushed onward into the subcutaneous tissue, and in the line of the proposed incision. If more than one syringeful is required the needle is withdrawn, filled, and thrust in again, about half an inch in front of the last puncture, thus insuring an anæsthetic area for the puncture, and in nearly every case this is painless after the first prick. When sufficient has been injected for the length of the incision the knife may be used *immediately.* In the greater number of cases the time occupied between the first prick of the needle and the incision is not more than a minute; there is no doubt about this, and it is quite remarkable how complete and rapid the anæsthesia is.

When eucaine is injected endermically, or into tense or inflamed tissues, the first injection causes pain beyond the prick of the needle for a second or two. This is due to the distention of the tissues by the fluid. In these cases the first injection should not consist of more than five or six minims.

The author does not think it possible to say yet how much one may do in certain cases. If the operation is of some length, it is always advisable to have the patient prepared for a general anæsthetic, and to have an anæsthetic present, as patients sometimes lose all nerve control, and then it is hopeless trying to do anything with eucaine.

He thus enumerates the cases in which he has used the drug:

Removal of Tumors.—Lipoma, 2; dermoids, 2; serocystic tumor of the breast, 1; enlarged bursa patellæ, 1; sebaceous cysts of the face, 2; sarcoma of the ulnar nerve, 1.

Rectal Operations.—Ischio-rectal abscesses, 24; fissures of the anus, 13; perineal piles, 7; thrombotic external piles (he has used it for a large number of these; he does not know how many).

Abdominal Operations.—Umbilical hernia (with supporting sac), 1; closure of colotomy wound, 1.

He has frequently used it in the out-patient room for abscesses, and has found it most useful, both in hospital and private work, for removing the redundant skin which is sometimes left after operations for hæmorrhoids.

The umbilical-hernia operation took about thirty-five minutes. The eucaine was first injected into a sinus, and after that had taken effect it was injected into various places on the skin. Two large flaps of skin were removed; the omentum was then scraped and ligatured, and the skin brought together with silkworm-gut sutures. The only pain felt was when the assistant stuck a pin into the patient, when he, the patient, volunteered the statement that that was the only pain he had felt.

The closure of the colotomy wound took fifty-nine minutes. The effects of the first lot of eucaine lasted fifty-four minutes, and the last amount was used for putting in the sutures for the skin.

The patient was quite quiet after the first ten minutes, before which he would persist in laughing, which made the operation difficult; but after he had been spoken to about this he was perfectly quiet, with gentle, regular abdominal movement, and there was no after-vomiting which so often takes place with general anæsthesia.

In this last case the author used from first to last quite six drachms of the four-per-cent. solution without any kind of toxic effects whatever.

This patient was prepared for general anæsthesia in accordance with the rule laid down above. In this case and in the case of the umbilical hernia, the comfortable condition of the patients during the operation was remarkable, and the effect of the drug in every way was most satisfactory.

The author has no after-effects to record. There was one doubtful case—a rectal one. The patient was a young man with an ischio-rectal abscess which had been allowed to burst. Mr. Wallis injected between twenty and thirty minims of the four-per-cent. solution and enlarged the opening. When the patient got up from the table he became very white and looked faint, perspiring profusely; the author thought it might be due to the drug, except that such a small amount had been used. On inquiry, he found that the man was apt to turn faint in this way, and had often done so. This was the only case.

The results recorded above prove, he thinks, one may fairly say, that eucaine used hypodermically as a local anæsthetic is most effective, and without toxic effects even when used in comparatively large quantities. The rapidity with which it produces anæsthesia is also a point in its favor.

With regard to the duration of the effect, he does not think that the case of the closure of the colotomy wound quoted above should be taken as an example. The greater part of the time was spent in sewing and oversewing the bowel, and, as one knows, this can be handled freely without causing pain even when no anæsthetic has been used. From twenty to twenty-five minutes is about as long as one can count on the anæsthesia lasting.

Eucaine is cheaper than cocaine, and, considering the drug all round, it has a great deal to recommend it.

The Purification and Sterilization of Drinking Water.—Before the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chi-*

rurgie, September 16th), Dr. E. de Kontkowski, of St. Petersburg, presented a paper in which he made the following points:

1. From the practical point of view, it is important to distinguish between the procedures that have for their object the purification of drinking water and those designed to sterilize it.

2. The purification of water on a large scale, as for the supply of a city, has for its objects to deprive it of injurious substances and to make it clear, colorless, free from disagreeable taste, and sufficiently aerated. Purified water should not contain pathogenic microbes or more than a small number of harmless microbes. Sterilized water should be sterile, that is to say, it must not contain any microbes capable of development.

3. From the hygienic point of view, the purification of drinking water is imperative in all cases in which surface water liable to contamination is to be used by human beings.

4. The sterilization of water is to be prescribed only in particular cases and for limited collections of persons, as during an epidemic, in schools, in camps, in hospitals, etc.

5. The sure and steady sterilization of water can not be effected at present, except by such processes as boiling and distillation.

6. Filters, large or small, with or without the use of reagents or electricity, do not give an absolute guarantee of the permanent sterility of purified water.

7. The only process that at present seems applicable to the purification of water on a large scale is slow filtration through sand, with or without oxidation of the organic matters by means of aeration, electricity, or harmless reagents.

8. The best sources of water are always to be sought for in springs or in subterranean sheets of water. These should be protected by proper regulations.

Nervous Affections in Women as Influenced by Operations on the Pelvic Organs.—A writer in the *Boston Medical and Surgical Journal* for September 23d, referring to an article in the *Rivista sperimentale di freniatria* for June, 1897, remarks that the general tendency of medical opinion of late years has been pretty steadily against the efficacy of operations upon the pelvic organs, especially oophorectomy, as a cure for nervous or mental affections, always excepting those cases where disease of those organs demands such operation, independently of the nervous condition. At a meeting of the Association of American Physicians, in 1891, says the writer, Dr. Wharton Sinkler, of Philadelphia, took the ground that it was unjustifiable to remove healthy ovaries in cases of nervous disease, and the late Dr. Lusk, of New York, said that he was tempted to regard such a proceeding as malpractice. A recent inquiry conducted by Angelucci and Pieraccini, of the provincial asylum at Macerata, Italy, has afforded considerable information in the way of the accumulation of statistics of cases in sufficient number to warrant certain definite conclusions.

The data which they present are based upon reports made to them by the heads of public and private asylums and psychiatric clinics in various countries, embracing a total of a hundred and fifteen cases in which surgical operations were performed upon the female sexual organs, either healthy or diseased, to combat some nervous disorder or to remove diseased organs. A hundred and thirty-seven of the asylums and clinics interrogated had had no cases of the sort. Out of seventy-six alienists, directors of asylums or clinics, fifty-six more or less strongly disapproved of such operations, twelve had not had sufficient experience to warrant a personal opinion, five were uncertain, and only three favored such operations in the treatment of hysterical conditions.

Of the hundred and fifteen patients, six were subjected to a simulated operation for the relief of hysterical conditions. Of the remaining patients, sixty-five had healthy organs removed for the cure of nervous conditions, eighteen nervous patients had diseased organs removed, and twenty-six women neither insane nor hysterical had diseased organs removed. Forty-one with hysteria had healthy organs removed on account of the nervous trouble; of these, seventeen became insane, ten grew worse, eleven were unaffected, and three were cured. Eighteen with hysteria had diseased organs removed; three became insane, six were unaffected, and nine were cured. Twenty-four women neither hysterical nor insane became insane after diseased organs were removed, and two others became neuropathic. Twenty-four insane women had healthy organs removed for the cure of their insanity; nineteen grew worse or were unaffected, and five improved or were cured. In only seventeen cases, therefore, were the results favorable, and of these patients, only three were cured of hysteria or other nervous disturbances by the removal of healthy organs. Inasmuch as six cases of hysteria were apparently cured by simulated operations, the investigators naturally inquire how far, in these cases where an actual operation was done, the influence of suggestion may have been felt.

As a result of their inquiry Angelucci and Pieraccini conclude that the removal of the uterus or its annexa, if in a healthy state, is to be proscribed as a means of treatment of hysteria or insanity, and that the existence of hysteria is almost a contraindication for any serious gynæcological operation. If any such operations are undertaken the indications must depend upon the gravity of the uterine or ovarian disease, and not upon any hope of a favorable influence upon the nervous conditions; the only favorable influence upon these latter conditions is in the way of suggestion. If all other means have failed in combating hysteria, a simple incision, simulating a laparotomy, may sometimes be admissible by way of suggestion.

Taking the statistics, as the present writers have done, from reports furnished by asylums and psychiatric clinics, it is possible that the proportion of cases injuriously affected by such operations is unduly large, since the physicians in charge of such institutions might have less opportunity for observing the patients that were entirely cured of any nervous or mental trouble after the operation. Nevertheless, those with any serious nervous or mental trouble which were cured by operation would naturally have come under the observation of these men during the time when they were suffering from such trouble, so that the proportion is really nearer the truth than it might at first seem. Furthermore, as is well known, the statistics of cases from surgical reports only are too often based upon the immediate results of the operation, without waiting to note the later developments in regard to any nervous troubles. It is therefore safe to accept the conclusions of Angelucci and Pieraccini, as indorsing the belief that the removal of healthy organs for the relief of nervous or mental troubles is wholly unjustifiable.

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FORMALDEHYDE AS A DISINFECTANT.

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It is safe to assume that no disinfectant which has been brought to the notice of the profession at any time has been more thoroughly and scientifically investigated than formaldehyde gas. This is undoubtedly due to the fact that it comes to us when the germ theory of disease has been fully confirmed and accepted, and numerous bacteriological laboratories thoroughly equipped for experimental work in this direction are found throughout the civilized world. Agents which are believed to have germicidal powers now receive the most exhaustive investigation and their value or worthlessness is decided. This is in marked contrast to the knowledge which we formerly possessed of these agents, particularly as to the gaseous disinfectants.

Twenty years ago, before the value of steam as a disinfectant was fully appreciated, sulphurous-acid gas, or sulphur dioxide (SO_2), was universally employed both by the profession and the laity. The range of its employment was very great, as it was used for the disinfection of ships, houses, etc., almost to the total exclusion of all other agents; in fact, it may be said that sulphur dioxide is the oldest disinfectant known, having been used in the time of Hippocrates and recommended by him. During this long period, in which SO_2 reigned supreme, it had no competitor of any note. Chlorine gas, which at one time was regarded as equally valuable with sulphur, even if not more valuable, has practically dropped into obscurity. Admitting that sulphur dioxide is a very valuable agent for this purpose, it is well known that in some instances its use is impracticable, as it destroys or bleaches certain fabrics and renders them unfit for use. Steam, now regarded as the most valuable disinfectant which we possess, has practically taken the place of the dioxide in public disinfection and wherever it can be used. Steam, however, can not be employed for the disinfection of houses, and the expense of the apparatus which is necessary for its practical application at present confines its use to quarantine stations, health departments, hospitals, etc. Even when it is available, certain fabrics can not be treated by steam without injury or destruction; therefore the necessity of a disinfectant which at times can be used in place of steam or sulphur has been urgently felt.

In 1868 Professor A. W. Hofmann, a German chemist, discovered that in heating a platinum spiral over the flame of an ordinary laboratory lamp burning methyl, or wood, alcohol a gas was produced, to which the name of formaldehyde was given. In 1888 A. Trillat, a French investigator, observed that the addition of a small amount of this gas to urine prevented or retarded decomposition. This was followed by further investigation, the details of which he published in 1891. Subsequently, in 1892, he gave to the French Academy of Sciences the results of his work on the germicidal properties of formaldehyde. Since that period the interest in this agent has increased, and during the past two years its disinfecting properties have been carefully and thoroughly investigated both at home and abroad.

The original and simple lamp of Hofmann has been gradually improved, until to-day we are in possession of lamps of large capacity and capable of generating sufficient gas to disinfect a spacious apartment. It is beyond the scope of this article to give a detailed description of the improvement made in this apparatus more than to say that the first lamp for the generation of formaldehyde gas sufficient for general disinfection was probably devised by Professor F. C. Robinson, of Bowdoin College, Maine, and shown by him at the meeting of the American Public Health Association held in Buffalo in 1896. Since that time numerous lamps of practically the same construction have been presented to the public. The details of Professor Robinson's lamp, which may be taken as a representative of the rest, will be explained in another portion of this article.

In order to ascertain the value of formaldehyde gas as a disinfectant, experimental work in this direction was begun at the New York Quarantine Station during the fall of last year and has been continued until the present time. It has been my aim to obtain results which are of practical value; not only to ascertain the germicidal power of this gas upon exposed surfaces, but to ascertain what penetration we may expect from it—this knowledge being essential to its proper application. Consequently, the micro-organisms used were not only directly exposed to the gas, but were placed inside of sterilized blankets, newspapers, and other packages in a manner similar to the experiments with steam recently reported by me. In order to keep in the lines of quarantine work pathogenic organisms were used—viz., the cholera, anthrax, and diphtheria bacilli and the bacillus of the plague. The degree of virulence was kept at the highest point by the occasional inoculation of guinea-pigs and white mice. Controls were made in each experiment; portions of the same culture being placed in packages and kept outside of the room or receptacle used for the test. If the controls did not grow the experiment was not recorded. The value of the result thus obtained is beyond question, and it will be appreciated that the work was necessarily slow and arduous.

The tests detailed in the tables which are presented in this article were confirmed by others of the same character. I therefore feel confident that the results presented prove the value of formaldehyde as a superficial disinfectant. The plague cultures used were from three sources: from the Hoagland Laboratory, Brooklyn; from the Pasteur Institute in Paris, through the courtesy of Professor Metchnikoff; and a culture received from Professor Haffkine, of Bombay; so that there could be no doubt as to the identity of this organism. It will be observed that in the experiment plague cultures of two different kinds are used. The propagation and care of these germs were, as in the experiments made with steam, under the direction of Dr. C. B. Fitzpatrick, the bacteriologist in charge of the laboratory at the New York Quarantine Station.

The tests were made in the steam chamber and in the steel formaldehyde tank or chamber on the disinfecting steamer James W. Wadsworth; also in a room of a thousand cubic feet space made expressly for the purpose in the laboratory of this department. In the centre of the floor of this room is a spray nozzle connected with a tank in an adjoining apartment holding ammonia gas in a liquefied state under a pressure of three hundred and fifty pounds. As a result the formaldehyde gas can at any moment be neutralized. This room, which is almost perfectly tight, I have used as a standard in the experimental work.

At the present time formaldehyde gas for the purpose of disinfection may be derived from the following sources:

1. From a commercial product, known as formaldehyde (formalin, formol), said to be a forty-per-cent. solution of formaldehyde gas in water. The exact method of its production is not explained by the manufacturers. It occurs as a clear, colorless fluid, having a characteristic odor and very irritating to the mucous membranes of the eyes and respiratory tract.

2. From the combination of the above-described formaldehyde solution (formalin) and chloride of calcium placed in a closed receptacle or autoclave. By the application of heat, the gas contained in the autoclave is given off in a dry state and conducted through a tube to the apartment to be disinfected.

3. The generation of formaldehyde gas by the oxidation of methyl or wood alcohol in the lamp already referred to.

4. By the heating of paraformaldehyde in the form of tablets (paraform).

FORMALDEHYDE SOLUTION.

A method of disinfecting with formaldehyde solution (formalin), now seldom used, is to place in the apartment to be disinfected a large shallow pan, into which is poured the amount of solution regarded as necessary for the purpose; the apartment is then closed for a certain period—generally twelve hours. As already stated, it is claimed that the formaldehyde solution (formalin) is a forty-per-cent. solution of formaldehyde gas in water; therefore the efficiency of the disinfection with this agent depends upon the amount of gas liberated. Those who believed that the entire amount of gas held in solution would be released have been doomed to disappointment, as experience has shown that only a small portion of it is given off. This may be demonstrated by agitating the solution left in the pan after its removal from the room under disinfection, when the presence of formaldehyde is fully appreciated. Besides, it will be seen that along the edges of the pan on the inside, or at the circumference of the fluid, is a white chalky or soapy deposit. This is known as paraformaldehyde, and was formerly regarded as an inert product. It is now known to be polymerized formaldehyde, from which the gas can only be released by the aid of heat under certain conditions. Therefore, as it remains in the pan, its value as a disinfectant is practically nothing. Although the following tables show that this solution may be used as a disinfectant with good results, they will also show that it is an extravagant method of securing formaldehyde gas, inasmuch as a large percentage is not liberated and a considerable amount is changed to the solid form, which at the time is valueless. So far as can be ascertained by experiment, the gas is given off slowly and with no degree of regularity, which are objectionable features, particularly where the disinfection is performed in a living apartment; here the room, which contains windows and doors, can not be made absolutely tight, and a certain amount of the gas escapes. In the experimental work with this method tests were made in an absolutely tight receptacle—viz., the steel chamber (without heat) on the James W. Wadsworth, consisting of a space of about a hundred and fifteen cubic feet; another series was made in a room of a thousand cubic feet, already described as constructed for the purpose. The latter may be regarded as representing an apartment in a dwelling house, although the room in question is carefully sealed and almost air-tight.

FIRST SERIES.

Experiments made in air-tight chamber. Formaldehyde solution (formalin) in shallow pan on floor of apparatus.

TABLE NO. 1.

Character of test: Cultures of the following organisms rubbed in (thoroughly saturating) different portions of a sterilized thick woolen blanket.* After the exposure small discs from the infected spots were cut out and placed in tubes containing bouillon. Amount of formaldehyde solution (formalin) used, eight ounces; exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

TABLE NO. 2.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) used, eight ounces; time of exposure, six hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

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* This may be regarded as a severe test in superficial disinfection, and will constantly be made use of in the work which follows.

Table No. 3.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) used, four ounces; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	Growth.
Cholera (5)	No growth.		

Table No. 4.

This and the following experiment (Tables No. 4 and 5) were made, not only to ascertain what penetration could be obtained, but also to test the value of the vacuum. Linen discs soaked in the different cultures were placed inside of the packages enumerated below. In each instance the packages were wrapped as tightly as possible. As the formaldehyde solution (formalin) is conducted to the interior of the chamber through a small pipe from a tank overhead, a vacuum in this experiment was made before the formalin was introduced. In this way the air contained in the chamber and, as far as possible, in the packages was removed, thereby offering less resistance to the penetration of the formaldehyde gas.

Amount of formaldehyde solution (formalin) used, one quart; time of exposure, twelve hours.

Plague (1),	infected	disc	inside	sheet of paper and envelope	No growth.
Plague (2),	"	"	"	single newspaper	No growth.
Plague (3),	"	"	"	newspaper (weight, one lb.).	Growth.
Plague (4),	"	"	"	blanket.	No growth.
Plague (5),	"	"	"	towel	No growth.
Diphtheria (6),	"	"	"	sheet of paper and envelope	No growth.
Diphtheria (7),	"	"	"	single newspaper	No growth.
Diphtheria (8),	"	"	"	newspaper (weight, one lb.).	Growth.
Diphtheria (9),	"	"	"	blanket	Growth.
Diphtheria (10),	"	"	"	towel	No growth.
Anthrax (11),	"	"	"	sheet of paper and envelope	No growth.
Anthrax (12),	"	"	"	single newspaper	No growth.
Anthrax (13),	"	"	"	newspaper (weight, one lb.).	Growth.
Anthrax (14),	"	"	"	blanket	No growth.
Anthrax (15),	"	"	"	towel	No growth.

Table No. 5.

Character of test same as Table No. 4, but without vacuum. Amount of formaldehyde solution (formalin) used, one quart; time of exposure, twelve hours.

Plague (1),	infected	disc	inside	single newspaper	Growth.
Plague (2),	"	"	"	newspaper (one pound)	Growth.
Plague (3),	"	"	"	blanket	No growth.
Plague (4),	"	"	"	towel	No growth.
Diphtheria (5),	"	"	"	single newspaper	Growth.
Diphtheria (6),	"	"	"	newspaper (one pound)	Growth.
Diphtheria (7),	"	"	"	blanket	Tube broken.
Diphtheria (8),	"	"	"	towel	Tube broken.
Anthrax (9),	"	"	"	single newspaper	Growth.
Anthrax (10),	"	"	"	newspaper (one pound)	Growth.
Anthrax (11),	"	"	"	blanket	No growth.
Anthrax (12),	"	"	"	towel	No growth.

The effect of the vacuum is here noticeable. In the experiment noted in Table No. 4, it will be seen that penetration took place in a single newspaper, and no growth occurred when the discs were removed from these packages and placed in bouillon; whereas in Table No. 5, where a vacuum was not made, a growth occurred when discs taken from a single newspaper were treated in the same manner.

SECOND SERIES.

Table No. 6.

Character of test same as Table No. 1. Experiments made in room of one thousand cubic feet space; amount of formaldehyde solution used, one pint; exposure, six hours.

Plague (1)	Growth.	Anthrax (3)	Growth.
Plague (2)	Growth.	Diphtheria (4)	Growth.
Cholera (5)	Growth.		

Table No. 7.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) used, one pint; time of exposure, twelve hours.

Plague (1)	Growth.	Anthrax (3)	Growth.
Plague (2)	Growth.	Diphtheria (4)	No growth.
Cholera (5)	Growth.		

Table No. 8.

Character of test same as Table No. 8. Amount of formaldehyde solution (formalin) used, three pints; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

The above experiments would show that for general disinfection this is an extravagant, unsatisfactory, and unreliable method of obtaining formaldehyde gas, and should only be used when no other method is available. When employed, at least three pints of the solution should be used for each thousand cubic feet of space. Even this can not always be depended upon, as the gas is only partly given off, depending in a great measure upon the size and shape of the receptacle. Therefore the pans should be large and shallow in order that the surface of formalin exposed shall be as great as possible.

The Combination of Formaldehyde Solution (Formalin) and a Solution of Chloride of Calcium.

What has just been said as to the impracticability of securing the gas from the formaldehyde solution (formalin) in the manner above described was fully appreciated by Trillat, to whom we are indebted for the discovery of a method by which we are enabled to rapidly remove from the solution all the gas therein contained. This investigator found that in adding to the formaldehyde solution a ten- to thirty-per-cent. solution of a neutral salt, preferably chloride of calcium, and placing the mixture in a closed receptacle and applying heat, all the gas contained in the mixture was rapidly given off in a comparatively dry state without the formation of paraformaldehyde. The apparatus (autoclave) which he devised for the purpose consists of a copper receptacle, silvered on the inside to prevent the action of the formaldehyde, which would in time affect the exposed copper. The receptacle has a capacity of about three or four quarts and stands on a tripod, allowing sufficient space for a lamp underneath. The top, or cover (which can be entirely removed), is securely fastened to the apparatus by turn-buckles. The autoclave is supplied with a pressure gauge and has an escape pipe of about a sixteenth of an inch inside diameter, which conducts the gas from the autoclave through a keyhole or any small opening into the apartment to be disinfected. This pipe connects with an angle valve which regulates the escape of formaldehyde from the autoclave. The necessary amount of the mixture above referred to having been poured into the receptacle, the cover is tightly clamped, the lamp underneath the apparatus lighted, and the valve on the escape pipe closed until a temperature of 135° C. is reached; at this time there is an inside pressure of probably thirty pounds; the valve is then opened and the formaldehyde allowed to escape into the apartment under disinfection. If the temperature does not exceed 135° C., the escaping gas contains but little moisture. This is regarded by Trillat as particularly desirable, although moisture does not, so far as I can ascertain, interfere materially with the disinfecting qualities of the gas. However, upon delicate hangings, etc., the moisture does not have a desirable effect. Usually, after the valve is opened, the gas from a mixture containing one pint of the formaldehyde solution (formalin) will be discharged in about thirty minutes. When the autoclave is opened more or less fluid is found. If the temperature has been raised about 135° C. the amount will depend on the volume of steam which has been given off with the gas. If the temperature is too high, and the operation is continued too long, nothing may be found in the receptacle but the chloride of calcium. Without fluid in the autoclave, the heat is very apt to injure the metal. These details are carefully explained by the instrument makers. It must not be forgotten that considerable pressure in the operation is essential, and that the instrument should be of the very best construction; otherwise accidents may happen. After the experimental work at this station had proved the value of formaldehyde gas as a disinfectant, I constructed on board the disinfecting boat James W. Wadsworth a circular steel chamber, or tank, having a capacity of two hundred and fifty cubic feet and being well braced in order to stand a vacuum (Fig. 1); to secure the latter a steam exhauster was added. The chamber is fitted with a coil of pipe inside to secure heat, if at any time it is deemed advisable. It has in addition a fresh-air inlet pipe, by which a current of fresh air may be drawn through the tank. The interior of this apparatus is fitted with trays made of galvanized iron wire, upon which are carefully laid the articles to be disinfected. These may be put into the tank either through an opening on the deck of the boat, or at the opening on the front of the tank. The latter is closed by a door which is hinged to a circular rim on the apparatus, containing a rubber gasket, in order that the tank may be made airtight. The door is fastened by turn-buckles. The autoclave rests on a stand on the left and connected with the tank by a one-sixteenth-inch brass discharge pipe, which conducts the gas to the interior of the chamber, where disinfection is to be performed. Fig. 1 shows the chamber open, with the autoclave to the left, resting on a shelf. Fig. 2 shows the chamber closed. The material treated is, as a rule, that which can not be subjected

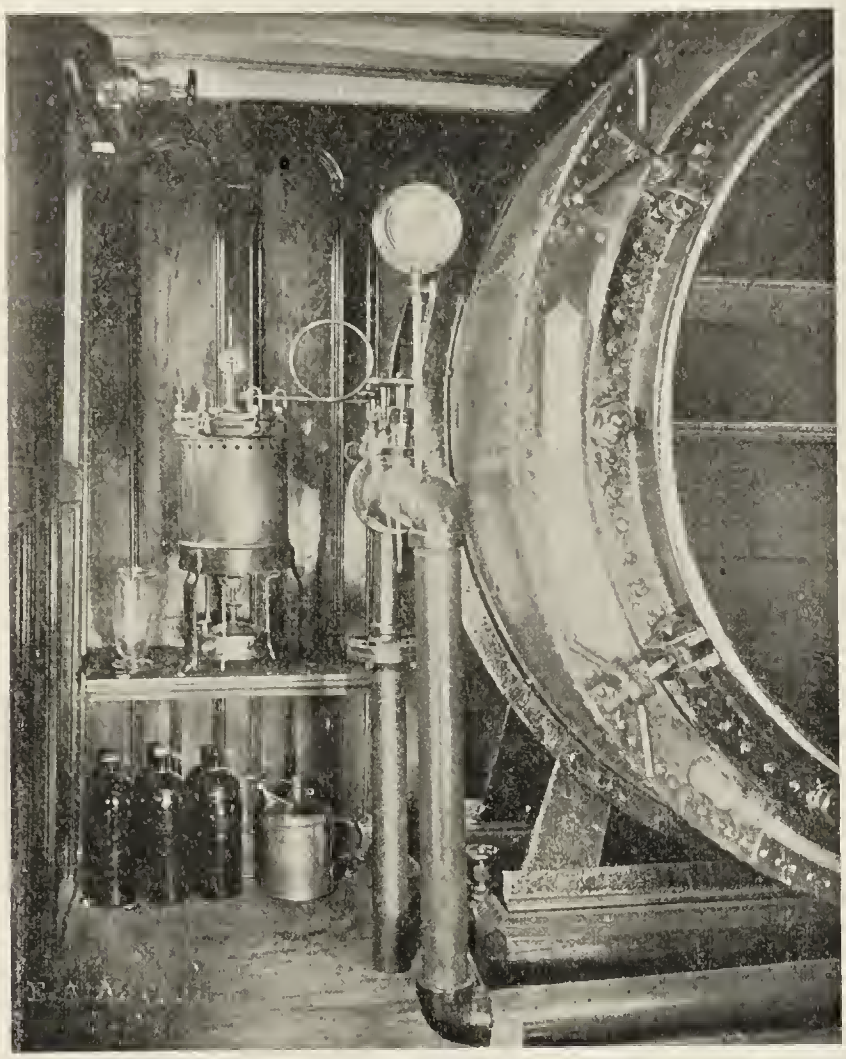

FIG. 1.

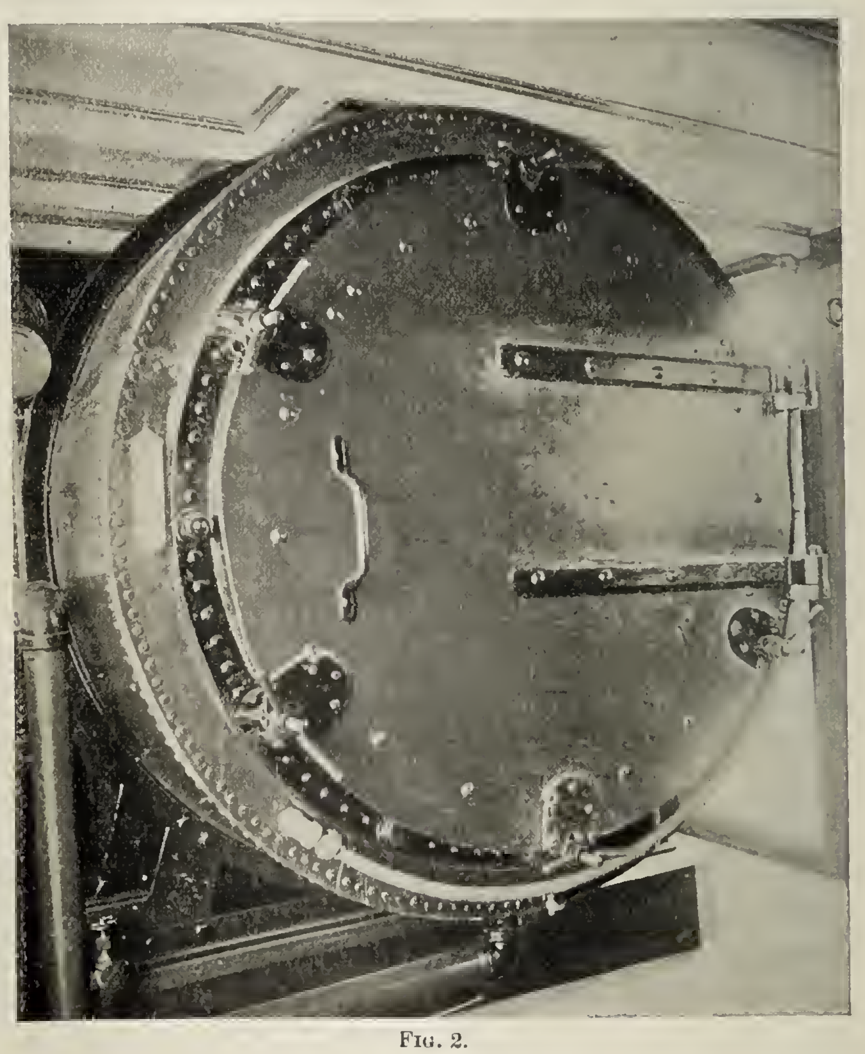

FIG. 2.

to steam, and consists of silk, laces, leather goods, etc. The special advantages of this chamber are, first, the removal by the steam exhauster of the air in the chamber and in the material to be disinfected, thus allowing greater and quicker penetration by the formaldehyde and performing the disinfection in a shorter time; second, the chamber being made air-tight, the material to be treated is affected by the entire volume of gas.

The experiments with this method of disinfection were made in the formaldehyde chamber just described, and also in a room having a space of one thousand cubic feet.

FIRST SERIES.

Formaldehyde chamber.

Table No. 9.

Character of test: Infected discs were placed inside of packages made of small blankets and sheets of paper and envelopes. Amount of formaldehyde solution (formalin) contained in mixture, one pint; exposure, four hours.

Cholera (1), infected disc inside of blanket	No growth.
Cholera (2), " " " " paper and envelope	No growth.
Plague (3), " " " " blanket	No growth.
Plague (4), " " " " paper and envelope	No growth.
Diphtheria (5), " " " " blanket	No growth.
Diphtheria (6), " " " " paper and envelope	No growth.
Anthrax (7), " " " " blanket	No growth.
Anthrax (8), " " " " paper and envelope	No growth.

Table No. 10.

Character of test: Infected discs placed inside paper and envelopes as follows: Amount of formaldehyde solution (formalin) contained in mixture, one pint; exposure, four hours.

Anthrax (1), inside single sheet of paper and envelope, ordinarily sealed	No growth.
Anthrax (2), inside single sheet of paper and envelope, all seams extra gummed	No growth.
Anthrax (3), inside three sheets of paper and envelope, ordinarily sealed	No growth.
Anthrax (4), inside three sheets of paper and envelope, all seams extra gummed	No growth.
Diphtheria (5), inside single sheet of paper and envelope, ordinarily sealed	No growth.
Diphtheria (6), inside single sheet of paper and envelope, all seams extra gummed	No growth.
Diphtheria (7), inside three sheets of paper and envelope, ordinarily sealed	No growth.
Diphtheria (8), inside three sheets of paper and envelope, all seams extra gummed	No growth.

Table No. 11.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Table No. 12.

Character of test similar to above (table). Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; exposure, six hours.

Plague (1), infected disc inside of blanket	No growth.
Plague (2), " " " " "	Growth.
Anthrax (3), infected disc inside of blanket	Growth.
Diphtheria (4), " " " " "	Growth.
Cholera (5), " " " " "	No growth.

Table No. 13.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, four ounces; exposure, six hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Table No. 14.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, four ounces; exposure, four hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Table No. 15.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, two ounces; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

In the above series of experiments a vacuum was not made, as it was desired to ascertain the value of an air-tight apartment. It is safe to assume that with the addition to the vacuum the results just given would be made doubly certain. It is seen that the formaldehyde gas released from two ounces of formaldehyde solution (formalin) in the mixture placed in the autoclave will be sufficient for superficial disinfection in an air-tight chamber the capacity of which is two hundred and fifty cubic feet, provided there is an exposure of twelve hours. This result will generally be secured with an exposure of but six hours. It must be remembered, however, that no other articles but the infected blanket were in the chamber. The experiments in Tables Nos. 9 and 10 were practically tests for penetration, as it relates to the disinfection of mail, etc., and show that with a pint of formalin in the mixture letters can be disinfected in four hours.

SECOND SERIES.

The second series of experiments with this method of disinfection were made in a room containing one thousand cubic feet of space, as follows:

Table No. 16.

Character of test: The infected discs were placed inside of paper and envelope, in pockets of coat and on blanket. Amount of formaldehyde solution (formalin) in mixture, one pint; time of exposure, four hours.

Cholera (1), infected disc in pocket of coat	No growth.
Cholera (2), " " " " " "	No growth.
Cholera (3), " " on blanket	No growth.
Cholera (4), " " " sheet of paper and envelope	No growth.
Plague (5), " " in pocket of coat	No growth.
Plague (6), " " " " " "	No growth.
Plague (7), " " on blanket	Growth.
Plague (8), " " " sheet of paper and envelope	No growth.

Diphtheria (9), infected disc in pocket of coat	No growth.
Diphtheria (10), " " " " " "	No growth.
Diphtheria (11), " " on blanket	No growth.
Diphtheria (12), " " in sheet of paper and envelope	No growth.
Anthrax (13), " " " pocket of coat	No growth.
Anthrax (14), " " " " " "	No growth.
Anthrax (15), " " on blanket	No growth.
Anthrax (16), " " in sheet of paper and envelope	No growth.

TABLE No. 17.

Character of test: The infected discs were placed inside the following articles. Amount of formaldehyde solution (formalin) contained in mixture, one pint; time of exposure, fifteen hours.

Plague (1), infected disc inside sheet of paper and envelope	No growth.
Plague (2), " " " single newspaper	No growth.
Plague (3), " " " newspaper (one pound)	Growth.
Plague (4), " " " blanket	No growth.
Plague (5), " " " towel	No growth.
Diphtheria (6), " " " sheet of paper and envelope	No growth.
Diphtheria (7), " " " single newspaper	Growth.
Diphtheria (8), " " " newspaper (one pound)	Growth.
Diphtheria (9), " " " blanket	No growth.
Diphtheria (10), " " " towel	No growth.
Anthrax (11), " " " sheet of paper and envelope	No growth.
Anthrax (12), " " " single newspaper	Growth.
Anthrax (13), " " " newspaper (one pound)	Growth.
Anthrax (14), " " " blanket	No growth.

TABLE No. 18.

Character of test similar to Table No. 17. Amount of formaldehyde solution (formalin) contained in mixture, one pint; exposure, fifteen hours.

Plague (1), infected disc inside sheet of paper and envelope	No growth.
Plague (2), " " " single newspaper	Growth.
Plague (3), " " " newspaper (one pound)	Growth.
Plague (4), " " " blanket	No growth.
Plague (5), " " " towel	No growth.
Diphtheria (6), " " " sheet of paper and envelope	No growth.
Diphtheria (7), " " " single newspaper	No growth.
Diphtheria (8), " " " newspaper (one pound)	Growth.
Diphtheria (9), " " " blanket	No growth.
Diphtheria (10), " " " towel	Growth.
Anthrax (11), " " " sheet of paper and envelope	No growth.
Anthrax (12), " " " single newspaper	Growth.
Anthrax (13), " " " newspaper (one pound)	Growth.
Anthrax (14), " " " blanket	No growth.
Anthrax (15), " " " towel	Growth.

TABLE No. 19.

Character of test: The infected discs were placed in a sterilized cotton envelope, and pinned on blanket and placed in pockets of coat. Amount of formaldehyde solution (formalin) contained in mixture, one pint; exposure, twelve hours.

Cholera (1), infected disc on blanket	No growth.
Cholera (2), " " in coat pocket	No growth.
Plague (3), " " on blanket	No growth.
Plague (4), " " in coat pocket	No growth.
Plague (5), " " on blanket	No growth.
Plague (6), " " in coat pocket	No growth.
Anthrax (7), " " on blanket	No growth.
Anthrax (8), " " in coat pocket	No growth.
Diphtheria (9), " " on blanket	No growth.
Diphtheria (10), " " in coat pocket	No growth.

In this same test discs were placed inside packages made of small pieces of woolen blankets.

Cholera (1), infected discs inside pieces of woolen blankets.	No growth.
Anthrax (2), " " " " " "	No growth.
Diphtheria (3), " " " " " "	No growth.
Plague (4), " " " " " "	No growth.

TABLE No. 20.

Character of test same as Table No. 19. Amount of formaldehyde solution (formalin) used in mixture, one pint; time of exposure, four hours.

Cholera (1), infected disc in pocket of coat	No growth.
Cholera (2), " " " " " "	No growth.
Cholera (3), " " on blanket	No growth.
Cholera (4), " " inside sheet of paper and envelope	No growth.
Plague (5), " " in pocket of coat	No growth.
Plague (6), " " " " " "	No growth.
Plague (7), " " on blanket	Growth.
Plague (8), " " sheet of paper and envelope	No growth.
Diphtheria (9), " " in pocket of coat	No growth.
Diphtheria (10), " " " " " "	No growth.
Diphtheria (11), " " " blanket	No growth.
Diphtheria (12), " " " sheet of paper and envelope	No growth.
Anthrax (13), " " " pocket of coat	No growth.
Anthrax (14), " " " " " "	No growth.
Anthrax (15), " " " blanket	No growth.
Anthrax (16), " " " sheet of paper and envelope	No growth.

TABLE No. 21.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, one pint; time of exposure, six hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

TABLE No. 22.

Character of test: Infected discs placed inside cotton envelopes and pinned to blanket. Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; time of exposure, twelve and a half hours.

Plague (1), discs in sterilized cotton envelope pinned on blanket	No growth.
Plague (2), discs in sterilized cotton envelope pinned on blanket	No growth.
Anthrax (3), discs in sterilized cotton envelope pinned on blanket	No growth.
Diphtheria (4), discs in sterilized cotton envelope pinned on blanket	No growth.
Cholera (5), discs in sterilized cotton envelope pinned on blanket	No growth.

TABLE No. 23.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

TABLE No. 24.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Same experiment.

Plague (1), infected discs inside sheet of paper and envelope.	No growth.
Plague (2), " " " " " " " "	No growth.
Anthrax (3) " " " " " " " "	No growth.
Diphtheria (4), " " " " " " " "	No growth.
Cholera (5), " " " " " " " "	No growth.

TABLE NO. 25.

Character of test same as Table No. 1. Amount of formaldehyde solution (formalin) contained in mixture, eight ounces; time of exposure, six hours.

Plague (1)..........	No growth.	Anthrax (3).........	No growth.
Plague (2)..........	No growth.	Diphtheria (4).......	No growth.
Cholera (5)...........	No growth.		

It requires very little consideration to appreciate the superiority of the method just described. Tables 16, 17, 18, 19, and 20 not only show the value of formaldehyde gas as a superficial disinfectant, but also that some penetration is usually secured, inasmuch as in these tests it penetrated paper and envelope, newspapers, blankets, towels, ets.; however, in room disinfection its action in this respect can not always be depended upon. A safe test for the value of this agent as a superficial disinfectant is its action on heavy sterilized woolen blankets, where cultures of the different organisms have been thoroughly rubbed into and through the fibre, as described in Table No. 1. An examination of Tables Nos. 22, 23, and 24, where this character of test was followed, would show that a mixture containing eight ounces of the formaldehyde solution, or formalin, is sufficient, when used in the Trillat apparatus, to disinfect a tightly closed room having a space of one thousand cubic feet, with an exposure of twelve hours. An exposure of six hours (see Table 25) is usually sufficient, but can not always be depended upon. The formaldehyde solution (formalin) used in the test above described contained about thirty-one per cent. of gas, as shown by the analyses made by Dr. Lederle.

THE GENERATION OF FORMALDEHYDE GAS BY THE OXIDATION OF METHYL ALCOHOL IN LAMP.

As already stated, the simple lamp of Hofmann has to-day been replaced by lamps of different designs for the generation of formaldehyde gas from methyl alcohol. These are not only practical, but are of sufficient size to disinfect apartments of considerable cubic space. The lamp suggested by Professor Robinson may be taken as a type of this method of generating the gas, inasmuch as it is simple and effective. In construction it is similar to a student's lamp, having an upright shaft supporting on one side the reservoir and on the other the pan which holds the alcohol escaping from the reservoir through a small tube. The pan, which is about eight inches in diameter and two inches in height, is covered by a movable cylinder ten inches high; the upper two or three inches being made cone shape, having an opening at the top of three inches. About midway in this cylinder is a diaphragm consisting of a disc made of platinized asbestos, perforated. In the cylinder above referred to are numerous openings. These are important, inasmuch as it is necessary to admit just enough air to maintain the proper combustion. In preparing the lamp for use, the amount of methyl alcohol required for the disinfection is placed in the reservoir, and through the small tube it reaches the pan on the opposite side. The mechanism is so adjusted that the alcohol fills the pan to a height just above the opening of the tube, which lies on the floor of the pan. A match is now carefully applied to the exposed alcohol and the cylinder put in place over the flame. It is kept in this position for a minute or less, until the asbestos disc is thoroughly heated; the cylinder is then quickly removed, and the flame extinguished by holding a cover over the pan. The cylinder is again put in place. The heat from the disc vaporizes the alcohol and oxidation ensues, and, as a result, the asbestos disc becomes red hot. Formaldehyde is now discharged from the lamp and the room is closed. It frequently occurs that the disc is not sufficiently heated in the first instance. For this reason the lamp should not be left until the disc is seen to be heated red.

The following experiments with the formaldehyde lamp were made in a room of one thousand cubic feet of space:

TABLE NO. 26.

Character of test: Infected discs were placed inside the packages enumerated below. Amount of alcohol used, one quart; time of exposure, twelve hours.

Anthrax (1),	infected disc inside of	towel................	No growth.
Anthrax (2),	“ “ “	envelope and paper......	No growth.
Anthrax (3),	“ “ “	newspaper............	No growth.
Cholera (4),	“ “ “	towel..................	No growth.
Cholera (5),	“ “ “	envelope and paper......	No growth.
Cholera (6),	“ “ “	newspaper.............	No growth.
Plague (7),	“ “ “	towel..................	No growth.
Plague (8),	“ “ “	envelope and paper......	No growth.
Plague (9),	“ “ “	newspaper............	No growth.
Diphtheria (10),	“ “ “	towel..................	No growth.
Diphtheria (11),	“ “ “	envelope and paper......	No growth.
Diphtheria (12),	“ “ “	newspaper............	Growth.

TABLE NO. 27.

Character of test same as Table No. 1. Amount of alcohol used, one quart; time of exposure, six hours.

Plague (1)..........	No growth.	Anthrax (3).........	No growth.
Plague (2)..........	No growth.	Diphtheria (4).......	No growth.
Cholera (5).............	Growth.		

TABLE NO. 28.

Character of test: Infected discs inside the following packages. Amount of alcohol used, one quart; time of exposure, six hours.

Plague (1),	infected disc inside	sheet of paper and envelope	No growth.
Plague (2),	“ “ “	towel....................	No growth.
Plague (3),	“ “ “	single newspaper.........	Growth.
Cholera (4),	“ “ “	sheet of paper and envelope	No growth.
Cholera (5),	“ “ “	towel....................	No growth.
Cholera (6),	“ “ “	single newspaper.........	No growth.
Diphtheria (7),	“ “ “	sheet of paper and envelope	No growth.
Diphtheria (8),	“ “ “	towel....................	No growth.
Diphtheria (9),	“ “ “	single newspaper.........	Growth.
Anthrax (10),	“ “ “	sheet of paper and envelope	No growth.
Anthrax (11),	“ “ “	towel....................	No growth.
Anthrax (12),	“ “ “	newspaper...............	Growth.

TABLE NO. 29.

Character of test same as Table No. 1. Amount of alcohol used, one pint; time of exposure, six hours.

Plague (1)..........	No growth.	Anthrax (3).......	No growth.
Plague (2).....	Growth.	Diphtheria (4).....	Tube broken.
Cholera (5).........	No growth.		

Same test.

Plague (1), infected discs inside sheet of paper and envelope	No growth.
Plague (2), " " " " " " " "	No growth.
Anthrax (3), " " " " " " " "	Growth.
Diphtheria (4), " " " " " " " "	Growth.
Cholera (5), " " " " " " " "	No growth.

Table No. 30.

Character of test same as Table No. 1. Amount of alcohol used, one pint; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Same test.

Plague (1), infected discs inside sheet of paper and envelope	No growth.
Plague (2), " " " " " " " "	No growth.
Anthrax (3), " " " " " " " "	No growth.
Cholera (4), " " " " " " " "	No growth.
Diphtheria (5), " " " " " " " "	No growth.

Table No. 31.

Character of test same as Table No. 1. Amount of alcohol used, one pint; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	Growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Table No. 32.

Character of test same as Table No. 1. Amount of alcohol used, one and a half pints; exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Table No. 33.

Character of test same as Table No. 1. Amount of alcohol used, a pint and a half; exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

These experiments show that the oxidation of one pint of methyl alcohol in the lamp above described, with an exposure of twelve hours, is hardly sufficient for superficial disinfection in a room of one thousand cubic feet of space, as it will be seen that a growth occurred in Table No. 31 (see Anthrax No. 3), where a pint of alcohol was used, with twelve hours' exposure. Therefore, a pint and a half should be used for each one thousand cubic feet of space, as indicated in Tables 32 and 33.

Disinfection by the Heating of Paraformaldehyde (Paraform) in the Form of Tablets or Pastilles.

In a previous part of this article, in describing the use of formaldehyde solution (formalin), reference was made to a white soapy or chalky substance which is found after the formalin has been exposed for some time. This is now known to be paraformaldehyde, and is made into tablets for disinfection. Recently, Schering & Co., the manufacturers, have devised an apparatus for heating these tablets which is simple and easily manipulated. It consists of a small sheet-iron cylinder resting on a tripod, and supporting at the upper end an iron cup, the upper portion of which is connected with the edge of the cylinder by wire netting, thus allowing a draught from underneath, which facilitates the removal of the gas from the cup. An alcohol lamp under the cylinder furnishes the necessary heat. The pastilles are placed in the cup, the lamp lighted, and the room closed.

The following experiments with this method of securing formaldehyde for disinfection were made in a room of one thousand cubic feet of space:

Table No. 34.

In this test an improvised apparatus was made by using a Bunsen burner under a small wire tripod, upon which was placed a shallow metal dish holding the pastilles. The Bunsen burner was operated by a gas meter outside of the apartment. At first the heat was too great, and once or twice the tablets were set on fire, and it was necessary to enter the room to extinguish the flame. The heat, however, was reduced, and remained in this manner for three hours, at the end of which time the tablets were burned to ashes. The gas was then turned off.

Character of test: Infected discs inside the following packages. Number of pastilles used, forty; time of exposure, twelve hours.

Anthrax (1), infected disc inside of towel	No growth.
Anthrax (2), " " " " envelope and paper	No growth.
Anthrax (3), " " " " newspaper	Growth.
Cholera (4), " " " " towel	No growth.
Cholera (5), " " " " envelope and paper	No growth.
Cholera (6), " " " " newspaper	Growth.
Plague (7), " " " " towel	No growth.
Plague (8), " " " " envelope and paper	No growth.
Plague (9), " " " " newspaper	Growth.
Diphtheria (10), " " " " towel	No growth.
Diphtheria (11), " " " " envelope and paper	No growth.
Diphtheria (12), " " " " newspaper	Growth.

Table No. 35.

In the second test the apparatus devised for this special purpose was used, which is an improvement, inasmuch as the lamp is so constructed that the heat can be properly regulated, and the alcohol contained is sufficient to keep the lamp burning for three or four hours, by which time the tablets are reduced to ashes.

Character of test same as Table No. 1. Number of tablets used, forty; time of exposure, twelve hours.

Plague (1)	No growth.	Anthrax (3)	No growth.
Plague (2)	No growth.	Diphtheria (4)	No growth.
Cholera (5)	No growth.		

Since this article was prepared for publication, an apparatus for the production of formaldehyde which possesses considerable merit has been placed upon the market by the Sanitary Construction Company. It consists of a copper reservoir having a capacity of about three quarts. From the bottom of this leads a one-fourth-inch copper tube which two inches lower down forms a coil. The lower end of the coil is continuous with a brass tube of the same diameter, which ends about four inches above the reservoir in a rubber tube having a nozzle sufficiently small to be passed through a keyhole or any other small opening. Underneath the coil is placed a Swedish lamp, which furnishes the necessary heat. The formaldehyde solution (formalin) which is placed in the reservoir is allowed to slowly enter the coil by means of a valve. At this point it is acted upon by the flame of the lamp underneath, and as a result the gas contained is discharged through the small tube into the apartment to be disinfected. The advantages claimed for this instrument are as follows: That the formaldehyde solution (formalin) can be used alone without the addition of a neutral salt, thereby dispensing with the pressure which is required when this mixture is used in an autoclave. As there is no need of the employment of pressure in releasing the gas, the instrument can be made of light material and comparatively cheap. This apparatus will be favorably considered, inasmuch as the autoclave devised by Trillat, and also the method of combining chloride of calcium with the formaldehyde solution for use under pressure in an autoclave, has been patented by a French company with which Trillat is now connected. Experiments which I have made with this apparatus would thus far show that the results are practically the same as those derived from the autoclave; it also has the advantage possessed by the Trillat apparatus of rapidly releasing from outside the formaldehyde into the apartment to be disinfected. However, I should prefer to have further experience with this instrument before deciding as to its relative value.

The Use of Ammonia to Neutralize Formaldehyde Gas.—It would appear from the prominence given this agent in connection with the use of formaldehyde that its function was misunderstood. The use of ammonia is not by any means a part of the disinfection with formaldehyde, and its employment is only indicated when the odor is objectionable and a desire is expressed to neutralize it. This may occur in a private residence, or, occasionally, where the apartment is needed for sleeping purposes. As a matter of fact, after the apartment which has been subjected to treatment is opened and well aired, or the clothing hung outside, the odor of the formaldehyde soon disappears. Besides, the use of ammonia presumably cuts short the disinfecting properties of the formaldehyde, whereas it should be continued as long as possible. If it is deemed advisable in any case to use ammonia, it should, if possible, be used in a compressed form. Ammonia can now be obtained in New York city in small cylinders containing one pound. The cost is no greater than for the water of ammonia, and the contents of one of the cylinders will sufficiently neutralize the odor of formaldehyde present in a room having a space of two or three thousand cubic feet. I have used ammonia in this form from a large cylinder for some time in the room used for experimental purposes in order to neutralize the formaldehyde preparatory to another test.

Investigations as to the Effect of Formaldehyde upon Insects, Animals, etc.—In conjunction with the experiments above cited I have carefully inquired into the effect of formaldehyde upon insects, fowls, guinea-pigs, mice, etc., by placing them in the apartment during disinfection under different circumstances and during various periods of time, ranging from three to fifteen hours, and in no instance has death ensued. Occasionally a guinea-pig would show evidence of an inflammatory condition of the respiratory tract; this, however, was uncommon.

Importance of Testing the Preparations used for Disinfection.—When it is considered how generally the formaldehyde solution (formalin) is selected as the agent from which the gas is obtained for disinfection, the necessity of knowing the exact amount of formaldehyde which it contains is evident. All commercial products are liable to deterioration and adulteration. A lot of formaldehyde solution (formalin) may to-day contain thirty-five per cent. of formaldehyde gas and the next lot probably thirty per cent. or less. It may also contain a large amount of methyl alcohol, sufficient in some cases to constitute an element of danger. If a pint of formaldehyde solution, either alone, mixed with chloride of calcium, or in any other form, is regarded as sufficient for the disinfection of a room of a given space, it is essential that the percentage of formaldehyde should be known to constitute a standard upon which to work, and the subsequent supply of this agent should conform to the standard, or the difference should be noted. From the beginning of my experimental and practical work with this agent all the formaldehyde preparations used have been carefully tested to ascertain the amount of formaldehyde contained. This has been under the supervision of Dr. Ernst J. Lederle, the consulting chemist of this department. In conjunction with this Dr. Lederle has very carefully investigated formaldehyde from a chemical standpoint, and the result of his work, which is of great value and interest, will be given in this issue of the *New York Medical Journal.* It is also essential that the methyl alcohol used in the disinfecting lamp should be tested.

Conclusion.—A careful analysis of the results obtained in the experimental investigation to determine the value of formaldehyde as a disinfectant will show that this agent can not be depended upon for disinfection where deep penetration is required. It can, however, be relied upon to penetrate letters and other thin packages if placed in an air-tight chamber, as in the apparatus referred to on the James W. Wadsworth. It is here that the importance and value of a vacuum is appreciated. Packages of the character just described are usually penetrated in a comparatively tight room. This has been proved not only by the germicidal effect upon the micro-organisms contained, but by the effect on blotting paper, ribbons, and silk, colored with fuchsine and magenta, and placed inside of letters, the envelope being tightly sealed. The change of color is very apparent upon opening the package after treatment. In packages made of blankets, clothing, etc., the action of formaldehyde upon infected discs placed inside is uncertain and not always the same. As a rule, penetration does not occur; at least the organisms are not generally killed. This uncertainty would seem to decide the inefficiency of formaldehyde for deep penetration . For superficial disinfection—*i. e.*, of hangings, furniture, clothing, furs, silks, and other articles which can be spread out and the surfaces exposed—formaldehyde is an agent of undoubted value, particularly as it does not, as a rule, injure the finest fabrics, and therefore may be safely used in an apartment furnished with delicate paper hangings and furniture.

In the selection of the method for disinfection with formaldehyde, it is evident that the use of a formaldehyde solution simply exposed on pans is not to be considered, provided other methods are available. The heating of pastilles of paraformaldehyde is a simple, effective, and neat method of securing the gas, although at present it is a comparatively expensive one. It is necessary, however, that the apparatus for heating the pastilles should remain in the apartment until the time for disinfection has expired. The gas is therefore evolved slowly, and its release depends upon the proper performance of a lamp which can not be kept under observation. For the same reason it may not burn sufficiently long to reduce the pastilles to ashes, or an accident may happen. I only refer to these as possibilities.

The lamp for the generation of formaldehyde by the oxidation of methyl alcohol, which has already been described, is also an effective method, as the experiments above shown will prove. This method of securing the gas is considerably cheaper than the preceding one—a pint and a half of wood or methyl alcohol, valued at twenty cents, being sufficient for the disinfection of a room having a space of one thousand cubic feet, whereas the expense of the pastille for this purpose is about seventy-five cents. Like the apparatus just described, the lamp can be purchased for a comparatively small sum, is easily manipulated, and is very satisfactory for house disinfection. However, it is practically subject to the same criticism—*i. e.*, that the process is comparatively slow, and the lamp remains in the apartment, and not under observation, until the disinfection is completed. In a structure subject to change of position, as a ship, it is not improbable that an accident may occur.

In the use of the autoclave and the new apparatus above referred to, we have a method by which the formaldehyde is rapidly released and conveyed to the apartment to be treated, and when this is finished, the instrument, which is operated from the outside, can be removed. In this way the material to be treated is subjected to almost the entire volume of gas before any considerable leakage from the room may occur, whereas in the slower methods, if the room is not made tight, at no time is the material in the room acted on by all or nearly all the gas generated. Short exposures are therefore only justified in cases where the gas is rapidly released into the apartment by the autoclave or a similar apparatus. Further, this method does not require that the apparatus be left in the apartment; thus is avoided the possibility of a faulty action of the instrument or the chance of a change in its position. For general use, therefore, particularly for ship disinfection, I am in favor of this method of disinfection.

FORMALDEHYDE,

WITH SPECIAL REFERENCE TO ITS CHEMISTRY IN DISINFECTION.

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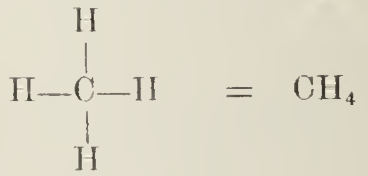
In connection with the experimental work on the value of formaldehyde as a disinfectant, which was carried on by Dr. Alvah H. Doty, health officer, Port of New York, chemical investigations were found to be of considerable value, and while perhaps the most important parts of these have not as yet been completed, it was thought that some general chemical information would be of some interest when given with the results of the disinfection experiments.

Historical.—Formaldehyde (contraction of formic aldehyde), or methylic aldehyde, having the chemical formula CH_2O, was first prepared, in 1868, by the celebrated German chemist A. W. Hofmann, to whom is generally attributed its discovery, although the phenomenon that a heated platinum spiral, placed in contact with the vapor of methyl (wood) alcohol, continued to be incandescent as long as any alcohol remained, was known for a long time previous to this. This chemist was undoubtedly the first one to isolate the body by this method. While, at the time, the reaction was only regarded as of scientific interest and the product had no commercial value, it forms at the present time the basis for the method of preparing formaldehyde on a very large scale. The incandescence described is due to the oxidation of the methyl alcohol with the formation of formaldehyde gas, according to the following reaction:

$$\underset{\text{Methyl alcohol.}}{CH_3OH} + \underset{\text{Oxygen.}}{O} = \underset{\text{Formaldehyde.}}{CH_2O} + \underset{\text{Water.}}{H_2O}$$

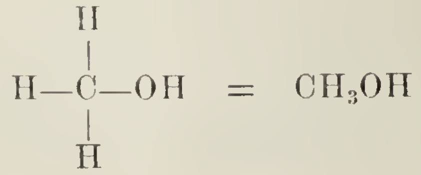
Formaldehyde may be considered an oxidation product of methane (marsh gas, CH_4). The oxidation of methane is shown in the following stages:

Methane :



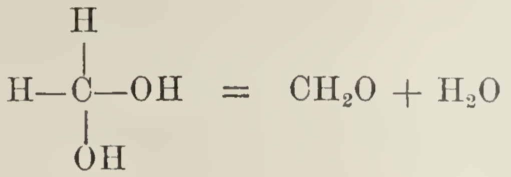
$$H{-}\underset{\displaystyle H}{\overset{\displaystyle H}{\underset{|}{\overset{|}{C}}}}{-}H = CH_4$$

Methyl alcohol :



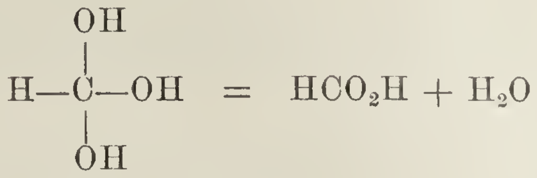
$$H{-}\underset{\displaystyle H}{\overset{\displaystyle H}{\underset{|}{\overset{|}{C}}}}{-}OH = CH_3OH$$

Formaldehyde:



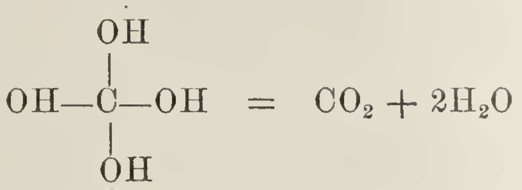
$$\mathrm{H{-}\overset{\displaystyle H}{\underset{\displaystyle OH}{C}}{-}OH = CH_2O + H_2O}$$

Formic acid:



$$\mathrm{H{-}\overset{\displaystyle OH}{\underset{\displaystyle OH}{C}}{-}OH = HCO_2H + H_2O}$$

Carbonic acid:



$$\mathrm{OH{-}\overset{\displaystyle OH}{\underset{\displaystyle OH}{C}}{-}OH = CO_2 + 2H_2O}$$

—showing that methane oxidizes, producing first methyl or wood alcohol, and, by cautious oxidation of this, formaldehyde, which in turn may be oxidized to formic acid.

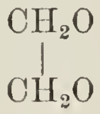
Properties.—At ordinary temperatures formaldehyde is a colorless gas, having an extremely irritating odor, and affecting the mucous surfaces of eyes and nose. At a temperature of — 20° C. this gas polymerizes, and forms a substance called paraformaldehyde, supposed to consist of two molecules of formaldehyde. Polymerization, in chemistry, is the union of two or more molecules of a compound, forming a more complex molecule, with somewhat different chemical and physical properties.

Paraformaldehyde is a white body, unctuous to the touch, somewhat soluble in water, more so in alcohol. Trioxymethylene is the name given to a white powder, supposed to be formed by the union of three molecules of formaldehyde. This white powder has a strong odor of formaldehyde, and is only very slightly soluble in water and alcohol.

Following are the three forms in which formaldehyde is supposed to exist:

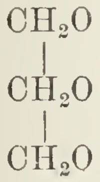
$\mathrm{CH_2O}$

Formaldehyde (gas).



$$\begin{array}{c}\mathrm{CH_2O}\\ |\\ \mathrm{CH_2O}\end{array}$$

Paraformaldehyde, supposed to compose the commercial solutions of formaldehyde.



$$\begin{array}{c}\mathrm{CH_2O}\\ |\\ \mathrm{CH_2O}\\ |\\ \mathrm{CH_2O}\end{array}$$

Trioxymethylene (solid).

Preparation of Formaldehyde.—Hoffmann's improved process consisted in passing methyl alcohol vapor through a platinum tube, heated dull red, and condensing the traces of aldehyde produced. Improvements were made on this method from year to year, replacing the glass tube by one of copper, filling this with platinum black, etc. The vapor was introduced by passing air through heated methyl alcohol. Besides the danger from explosion, this method furnished very small amounts of the product. In 1887 A. Trillat began to study the question of the production of formaldehyde on a commercial scale. The process he finally adopted consisted in the discharge of a jet of vapor of methyl alcohol under pressure against an oxidizing surface, avoiding all danger from explosion, and, as any number of jets can be arranged for, a large amount of alcohol can be rapidly oxidized. It was found that porous substances, as coke, charcoal, etc., in contact with the copper, favored the oxidation.

Preparation of Commercial Formaldehyde Solution.—While the details of the processes for the preparation of formaldehyde on a large scale are not disclosed, in general it may be said that the raw material in every case is methyl (wood) alcohol, and that the oxidation is conducted as just described, by projecting jets of vapor of methyl alcohol into a heated copper tube, containing porous substances. The alcohol jet is first lighted and kept burning until the copper tubes are heated; the flame is then extinguished, and the operation is going on when the copper tube becomes incandescent, but without an actual flame appearing. After passing the oxidizing surface the vapors are either condensed directly or are led into a series of chambers containing water, which dissolves the gas. In this manner a solution as strong as forty per cent. may be prepared.

Chemical Properties.—Formaldehyde has powerful chemical affinities, combining with many bodies; sometimes definite and crystalline substances are formed, but often amorphous ones of doubtful composition. Many addition products are formed by it. The fact that formaldehyde and ammonia combine quite readily is interesting and of great importance, as it affords a means for its determination, and, as the product of the combination, hexamethylentetramine, is odorless, the pungent odor of formaldehyde can be readily removed by the vapor of ammonia.

Ammonia and its compounds being often products of decomposition, formaldehyde becomes a very valuable agent as a deodorizer.

Antiseptic Properties.—The credit of the discovery of the powerful antiseptic properties of formaldehyde and its practical application is due to A. Trillat, who in 1888 first noticed its preserving action on samples of urine, and in 1891 made public his experiments, showing it to possess antiseptic properties much superior to all non-toxic organic antiseptics then known.

Toxicity.—To all the higher forms of life formaldehyde appears to be non-toxic. In man the first effect of the vapor is a powerful irritation of the mucous surfaces of the eyes and nose. Animals have been kept in rooms for hours, the air of which was charged with formaldehyde vapor; flies, and insects in general, are not affected by it. Weak solutions have been taken internally without injury. But this is by no means a reason why its general use in foods should be permitted.

Formaldehyde has a powerful action on albuminoid substances, rendering them more insoluble and no doubt more difficult to digest. Formaldehyde has also been shown to interfere with the digestive processes.

In milk and similar articles its use should be absolutely prohibited, in other foods restricted.

Commercial Forms of Formaldehyde.—It appears in commerce principally in the form of a solution of the gas in water, which is also called formalin (trade mark) and formol.

These solutions are almost always sold as containing forty per cent. of the gas. They are colorless liquids, having an acid reaction and the pungent odor of formaldehyde. It is now generally admitted that they are not simple solutions of the gas in water, but a mixture of the various polymers of it, and all of which on proper treatment yield the gas.

Recently the following articles have been offered for generating formaldehyde gas:

A solution called "formochlor," containing from twenty-five to thirty per cent. of formaldehyde and some calcium chloride. This solution is intended for use in the Trillat autoclave.

Paraformaldehyde in tablet form.

Also a white powder, probably trioxymethylene.

The following table shows the composition of the commercial solutions and tablets as offered for sale by leading manufacturers:

Sample.	Appearance.	Formaldehyde.	Acidity equivalent to formic acid.	Sp. gr. at 75° F.	Ash.	Price per lb. (100-lb. lots.)	Remarks.
		Per cent.	Per cent.		Per cent.		
A.	Clear solution.	37·50	0·096	1·059	0·027	30 cts.	
B.	Clear solution.	33·40	0·231	1·070	0·038	34 "	
C.	Clear solution.	39·25	0·021	1·045	0·004	18 "	
D.	Clear solution.	38·50	0·021	1·052	0·015	18 "	
E.	Clear solution.	34·65	0·069	1·053	0·013	18 "	Ignited on applying lighted match.
F.	Solution cloudy.	25·00	.....	1·177	13·000	70 "	
G.	White solid (paraformaldehyde).	99·50	.....	.....	.....	$3.50	Paraformaldehyde tablets.

With one exception, all the manufacturers allege the ordinary formaldehyde solutions to contain forty per cent. of the gas. The examinations show a considerable variation from this strength and emphasize the importance of testing all solutions used in disinfection.

All solutions contained methyl (wood) alcohol, from a trace only in some to an amount (sample No. E) sufficient to cause the sample to burn when a lighted match was applied to it.

It is stated that methyl alcohol is sometimes purposely added to strong formaldehyde solutions to prevent separation of polymerized products.

Great care should be exercised in using solutions of formaldehyde containing much alcohol for disinfection on account of the danger of explosion of the vapor. When such solutions are used for generating the gas under pressure there appears to be considerable loss of formaldehyde on account of the formation of the inert body methylal. Experiments on this point are in progress.

METHODS OF PREPARATION OF FORMALDEHYDE GAS AS USED IN DISINFECTION.—1. From methyl alcohol by oxidation.

2. From commerical solutions of formaldehyde.

3. From solid products which by proper treatment yield the gas.

1. *From Methyl or Wood Alcohol.*—Wood alcohol is prepared on a large scale from the aqueous liquid obtained in the dry distillation of wood. It does not occur free in Nature, but is formed in the distillation process. The principle of the generation of formaldehyde by the oxidation of methyl alcohol has been described. At the present time a large number of contrivances are on the market which are based on this reaction. The difficulty with the ordinary lamp is that the generation of formaldehyde gas is slow and the amount obtained from a given quantity of alcohol indefinite.

In October, 1896, Professor F. C. Robinson, of Bowdoin College, Maine, described an improved lamp, having the general form of an ordinary student's lamp; the oxidation of the alcohol was brought about by means of a platinized asbestus disc. This was the first decided improvement brought out in this country. Previous to this the lamps of Gambier and Brochet, Tollens and Trillat, also Krell, were well known in Europe.

In all cases where methyl alcohol is used, great care must be exercised to prevent fire.

The amount of formaldehyde generated by a particular lamp from a given amount of alcohol must be determined in each case.

2. *From Commercial Solutions.*—If a solution of formaldehyde gas is heated, some of the gas is driven off, but a very considerable amount will remain in the form of a white solid—paraformaldehyde. This simple method, then, can not be used for preparing the gas from solutions, for disinfection, economically.

In February, 1896, A. Trillat made public a method by which all of the formaldehyde gas in a solution could be liberated and applied in disinfection. This method was at once received with great favor and soon became universally well known. Without describing the method in detail, it may be said to depend on the fact that when a solution of formaldehyde is heated under pressure with calcium chloride the gas may be liberated completely, without the formation of polymerized compounds, and may be discharged in large volumes and in a comparatively dry state. The operation is carried on in an autoclave, heated by gas or oil, and the formaldehyde vapor conducted through a tube to the place to be disinfected.

Although Trillat appears to have originally published his method without reserve, the process, including the mixture of formaldehyde and calcium chloride, was subsequently patented. This fact has induced manufacturers to seek for other methods of using the solution successfully, and an apparatus has appeared in which the solution is vaporized at a high temperature. Experiments with the apparatus are now being made.

3. *Formaldehyde from Solid Compounds.*—There have recently appeared on this market several solid products for generating formaldehyde gas.

A. Paraformaldehyde in tablet form, perfectly dry, and corresponding to an equivalent of about ninety-nine per cent. of formaldehyde gas. These tablets are heated by means of a small lamp, when formaldehyde is given off. At a high temperature this solid is inflammable. The price, $3.50 a pound, is prohibitive for use for ordinary disinfection.

B. Paraformaldehyde in the form of cubes, of waxy consistence, said to contain an equivalent of seventy per cent. formaldehyde. (Price, fifty cents a pound.)

C. Paraformaldehyde and calcium chloride in solid form, to be used in autoclave under pressure, with water.

It does not seem at all unlikely that in the near future formaldehyde gas for disinfecting purposes will be generated cheaply by a simple process from some one of these solid products.

Detection of Formaldehyde.—The following simple tests are useful in disinfecting experiments. If present in sufficient amount, formaldehyde may be detected by its characteristic odor; minute quantities, either in solution or in the form of gas, by certain color reactions.

Almost all of the mineral, vegetable, and aniline colors are unaffected by formaldehyde, an important fact in connection with house disinfection. The exceptions are a few delicate aniline reds, which are changed to purple or blue by its action.

Fuchsine, especially when applied to silk, has been recommended as a delicate reagent. After many experiments, we have found that the fuchsines on this market (we tried all shades) were far less sensitive than magenta (German), and the delicacy was increased when filter paper, faintly dyed with it, was used. The pink shade of the color on the paper is changed to purple or blue by traces of formaldehyde. This is useful when applied in experiments on penetration.

Schiff's reagent (a solution of magenta, decolorized by means of sodium sulphite and sulphuric acid) is colored violet by alhehydes.

Resorcin Test.—If to a solution containing formaldehyde a solution of caustic soda is added to decided alkaline reaction, then a few drops of a resorcin solution in water, and the mixture is boiled, the liquid is colored crimson red. By this test one part of formaldehyde in five million parts of water may be detected.

Quantitative Determination of Formaldehyde.—The importance of being able to test accurately the strength of solutions of formaldehyde used in disinfection is apparent to all.

Commercial solutions are by no means always of the strength as represented. Our first difficulties encountered in this part of the work were found to be the lack of uniformity of the methods used in the examination of these solutions by different chemists, and while it would be impossible in this article to enter into detailed descriptions of chemical methods, it may be of interest to outline the method finally adopted as giving uniform and reliable results. The principle on which the method is based is that ammonia and formaldehyde combined quite readily to form the compound hexamethylentetramine, according to the following reaction:

$$\underset{\text{Formaldehyde.}}{6CH_2O} + \underset{\text{Ammonia.}}{4NH_3} = \underset{\text{Hexamethylentetramine.}}{(CH_2)_6N_4} + \underset{\text{Water.}}{6H_2O}$$

From the amount of ammonia required to form this compound the formaldehyde is calculated. The best results were obtained when an excess of ammonia was used, the mixture allowed to stand for at least twelve hours, with occasional shaking, and the excess of ammonia present determined by means of sulphuric acid, using coralline (rosolic acid) as an indicator.

Method of Analysis.—Take specific gravity of the solution at the room temperature.

Place two or three cubic centimetres, carefully measured, into a bottle with glass stopper; add fifty to sixty cubic centimetres N/2 ammonia solution; shake well, and let stand twelve hours, shaking occasionally. Then titrate with N/4 sulphuric acid, using coralline (rosolic acid) as indicator.

Calculation.—C. c. of ammonia neutralized by formaldehyde = c. c. of ammonia used, minus c. c. of sulphuric acid.

Then, per cent. strength of solution =

$$\frac{2.25 \times \text{c. c. ammonia neutralized by formaldehyde.}}{\text{Grammes solution taken.}}$$

In case the solution under examination is acid, the amount is first to be determined by fixed alkali and a corresponding correction made in the above calculation.

471 West One Hundred and Forty-third Street.

PAINLESS EYE OPERATIONS.

By W. H. BATES, M.D.

Cocaine does not prevent pain in many tenotomies and advancements of the eye muscles and in most lacrymal operations. In children and nervous patients many such operations are impossible without a general anæsthetic because of the pain. Inflamed eyes resist the action of cocaine. Koller's method of subconjunctival injection of cocaine does not always succeed in producing complete anæsthesia in inflamed eyes or when the operation is prolonged. During the past three years the writer has been able to operate painlessly with cocaine and the suprarenal extract in cases which formerly required ether. It was also found necessary to take precautions against injury to the corneal epithelium, to discard the speculum, and to employ the hot-water douche immediately after the operation.

One of the principal causes of pain during a long operation is the exfoliation of the corneal epithelium from exposure to the air. The use of strong solutions of cocaine, ten per cent., increases the liability to this accident by drying and hardening the cornea. It may be done by careless sponging of the eye during the operation. There is no pain more agonizing than that from an abraded cornea. To prevent it the eye should be closed frequently, weak solutions of cocaine should be used, two to four per cent., and great care observed not to touch the cornea. A speculum is objectionable. It gives some patients the impression that their eye is being drawn out of their head. Others have a feeling of horror produced by its presence. If physicians would try a speculum on their own eyes they would understand how disagreeable its presence is. I believe that I succeed in securing a painless operation in many cases because I do not use a speculum or fixation forceps. There is a proper method of using cocaine. It should be instilled every few minutes until anæsthesia is produced, and during the progress of the operation it should be used frequently. If hæmorrhage occurs, one should wait until it stops. There are cases which require half an hour or longer to produce cocaine anæsthesia. When the eye is sore or inflamed, and when the patient is very nervous, cocaine does not produce anæsthesia. In such cases a few drops of the aqueous solution of the extract of the suprarenal capsule relieve the congestion sufficiently for the cocaine to produce anæsthesia. In an extensive tenotomy of the tendon of an eye muscle traction on the tendon with a strabismus hook is painful, unless the suprarenal is used with the cocaine. It is customary to use ether for advancements, because with cocaine alone the pain is more than the patient can stand. The intelligent use of the suprarenal with cocaine secures a painless advancement. I have operated on inflammatory glaucoma painlessly, using the suprarenal to relieve the congestion, so that cocaine was able to anæsthetize. Darier, of Paris, has since reported painless iridectomies in these cases from the use of the suprarenal extract and cocaine. In lacrymal operations, especially when the sac is tender and swollen, the operation for dividing the stricture is very painful when cocaine alone is used. The suprarenal extract syringed through the punctum whitens the mucous membrane and reduces the congestion so much that cocaine produces complete anæsthesia. During the operation one should syringe the parts with a few drops of cocaine, alternating with a small quantity of the suprarenal. When enough cocaine and suprarenal are used, in the worst cases the patient may be operated upon without any pain whatever. I consider this result a great triumph for the suprarenal.

The value of the suprarenal extract as a supplement to cocaine in securing anæsthesia was shown in cases in which an operation had been done with cocaine alone, and later a similar operation on the same patient with cocaine and the suprarenal extract. The patients appreciated the benefit derived from the use of the suprarenal extract. During the past three years I did more than one hundred operations in which the extract was as necessary as cocaine in securing complete anæsthesia.

The following case is illustrative:

Mr. R., aged twenty-six years, a very nervous man, had been operated upon some years before for stricture of the nasal duct, at which time he suffered great pain from the operation, although cocaine was used freely. When I saw him he was suffering from a relapse of his former trouble. There was a large red swelling at the side of the nose with great tenderness. There was congestion of the inner portion of the eyelids. The suprarenal lessened the congestion of the mucous membrane, and its use for fifteen minutes, alternating with two-per-cent. cocaine, produced complete anæsthesia. Two hours were spent during the operation, and the anæsthesia was made continuous by instilling the suprarenal and cocaine frequently. There was no pain.

A number of other lacrymal cases in which the patients were older and younger were operated upon. Many of them were in very nervous women who had a great dread of the knife. In some of the cases relapses occurred, and the patients did not dread a second, third, or fourth operation, or even a fifth. I wish I could emphasize the great value of the extract in these cases, so that its use might become more general and much pain be prevented.

The suprarenal extract fails to astringe the bloodvessels of the conjunctiva unless it is properly prepared. The dried glands may be obtained from Armour and Company, Chicago. A solution of the extract for use is prepared by mixing about ten grains of the dried powdered glands in half a drachm of water, and filtering. It should be prepared just before the operation, as it soon spoils when exposed to the air at the ordinary temperature. Do not mix anything else with it, as cocaine, carbolic acid, bichloride of mercury, and most substances interfere with its action in the eye. The extract is not objectionable in any way, being neither irritating nor poisonous. It has only the properties of an astringent, and it is the most powerful astringent that is known. For further particulars of its chemical and physiological properties see *New York Medical Journal*, May 16, 1896.

In this article I reported a number of failures in securing complete anæsthesia with the suprarenal and cocaine, and stated that at the time I had no explanation to offer for the cause of the exceptional failures. Since then, with freshly prepared solutions of the extract, I have been so uniformly successful that I believe in the few cases in which the suprarenal did not act that the failure could be ascribed to the use of an extract not properly prepared.

When an eye operation is finished, and the effect of the cocaine has passed off, the eye is usually sore; it may be very painful for several days. To prevent the occurrence of this soreness and pain, the use of the hot-water douche is very effective. It should be employed at once, while the eye is still under the influence of cocaine.

A fountain syringe which holds a quart is convenient. A thermometer is necessary, and an ordinary bath thermometer answers the purpose. The water should be mixed in a large pitcher with a teaspoonful of salt to each pint, the temperature determined by the thermometer, and the water then poured into the bag of the syringe. The syringe is hung on a nail about three feet above the patient, who holds the rubber tube in one hand and directs the stream of water against the closed eye. The water drains into a basin held beneath the patient's face. The temperature of the water should be about 115° F. It may be a few degrees warmer or cooler. A temperature of 120° F. or over is unnecessary and very painful. The quantity of water should be at least three quarts, and more is usually desirable. There is a sense of relief almost at once. If a considerable amount of water is used there may be no soreness or pain whatever after the patient leaves the office. Fifteen minutes is long enough, as a rule, for the syringing. I am indebted to the late Dr. G. C. Cocks, of the New York Eye Infirmary, for valuable suggestions on the use of hot water to relieve congestion and pain in the eye.

The value of the immediate use of hot water after an operation is illustrated by the following cases which had been operated previously without the douche:

Case I.—Mrs. C., aged thirty-six years, had been operated upon for advancement of the right inferior rectus muscle. There was no pain during the operation, but the eye was very sore afterward for several days. A similar operation was done on the other eye, and the hot douche used at once. The patient had no discomfort. She stated that the thread in her eye was not irritating.

Case II.—A man, aged forty years, had a tenotomy performed. The eye was sore for three days. A similar operation was done later, when the hot douche was used at once. He stated positively that his eye was not sore at all afterward.

Case III.—Mrs. R., aged forty years, suffered from pain for several days after an advancement. A similar operation was not followed by pain when the hot douche was used at once.

Case IV.—Mrs. V., aged fifty-five years, a very nervous woman, had been operated upon a number of times for tenotomy of the eye muscles. The eye operated upon was sore for a week as a rule. A tenotomy lately, using the douche, was not followed by soreness in the operated eye.

Case V.—Miss C., aged thirty-five years, a very hysterical woman, who usually remained in bed for three days or longer after an operation on her eye muscles, was relieved by the immediate use of the hot douche. Two advancements done lately, in which the hot water was used before the cocaine anæsthesia disappeared, were not followed by the usual soreness afterward.

Other cases might be reported. They were all similar, in that they had pain after the operation when the douche was omitted and no pain afterward when it was used.

I have demonstrated to myself that tenotomies, advancements, and lacrymal operations can be done with no pain either at the time of the operation or afterward.

50 East Sixty-fourth Street.

OPACITIES IN THE VITREOUS.

By RICHARD ELLIS, M. D.,
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An opacity in the vitreous is a symptom of many diseased conditions of the vitreous, the ciliary body, the chorioid, and the retina; no other intraocular symptom represents such a manifold variety of pathological conditions.

The opacity may consist of minutely fine dust specks, through which none, all, or a part of the fundus may be seen; it may consist of dense, thick masses in the vitreous, through which absolutely nothing but "black darkness" can be seen; it may consist of the thousand and one grades between the few fine specks and the black opacity completely filling the vitreous.

We are so accustomed to associate inflammation with some complicated structure that we can scarcely realize the vitreous in itself can be the seat of a hyalitis, pure and simple, yet from this simple hyalitis an opacity may result with no causative changes in the ciliary body, chorioid, or retina.

We are so accustomed to associate inflammation with blood circulation that we can scarcely believe the vitreous in itself can breed a variety of pathological conditions, since the vitreous has no blood supply, but is nourished by lymph exuding from the capillaries of the chorioid; we are, however, prepared to change our position when we recall the variety of the pathological processes possible in the cornea, which is also nourished by lymph alone.

Though the vitreous, from its simple structure, is less liable to be the seat of an inflammation than the cornea is, I am satisfied the future will show us that the vitreous in itself must take a more important position in the pathology of the eye.

To-day "hyalitis" is mentioned with an apology by most writers; mentioned so as to be sure to "put it all in." Time will show that such an apology is not necessary.

Were the vitreous in the anterior chamber, where its pathology could be studied more carefully, we should find that many "opacities due to a chorioditis" would change to "opacities due to changes in the vitreous."

When a small foreign body in the vitreous can cause such a tremendous row in the whole eye, we are impressed with the belief that as yet we know little of the pathology of the vitreous, except as it is influenced by its neighbors, the chorioid, the retina, and the ciliary body. Certainly, we are ready to grant that the vitreous may produce various unknown inflammations, arising in itself and developing assisted by no neighborly pathological interference. The vitreous often suffers from pathological retinal changes, originating from a variety of causes, chief of which is a "hæmorrhagic retinitis."

If the hæmorrhage makes its way within the retinal structure, "between the fibres," or between the retina and the chorioid, no vitreous changes may arise, but if the hæmorrhage is between the retina and the vitreous, or in the vitreous itself, then a variety of opacities may be expected, from a few dark flakes to great black restless masses, breaking up the structure of the vitreous, interfering with the support of the retina, and producing synchisis, detachment of the retina, and complete blindness from this, if not from the great opacities.

Text-books give the causes of retinal hæmorrhage—they are many, yet more might be added. Any cause interfering with normal retinal life, from interstitial changes to blood or vessel changes, may produce a hæmorrhage.

As I see the retinal vessels delicately balanced in this more delicate membrane and subject to an infinite variety of tension, as determined by the individual's daily life, I wonder that a retinal hæmorrhage is not a usual rather than an unusual occurrence.

I will not attempt to mention the retinal conditions which may produce an opacity in the vitreous. Mackenzie has observed that "the tendency to retinal hæmorrhage exists when the corpuscular richness of the blood falls below fifty per cent." We might state in a nutshell that an abnormal condition of the retinal structure, vessels, blood, or tension may produce a retinal hæmorrhage, which may become an opacity behind or within the vitreous. The chorioid structure is chiefly made up of three layers of vessels, decreasing in size from without in, so that the lymph may be gently exuded from the inner capillary layer to nurse the vitreous and retina; consisting almost entirely of blood-vessels supplied with an abundance of blood actively circulating from the ciliary arteries, we are ready to expect, as in the retina, that any change in chorioidal structure, vessels, blood, or tension may produce an exudation which becomes an opacity in the vitreous, from a single threadlike opacity to one filling the vitreous.

Just how easily lymph exudes from the chorioid, and just how easily blood might exude, we can imagine when we notice how quickly the anterior chamber is refilled by the ciliary processes, which are in function and in blood supply closely related to the chorioid.

To sum up again: An opacity in the vitreous may arise from many abnormal conditions of the vessels, the structure, the blood, or the vessel tension in the retina, the chorioid, the ciliary body, or the vitreous itself. It is not the purpose of this article to attempt to mention what these abnormal conditions are—it is enough to present a brief summary.

Changes in the vessel walls may be produced by a variety of causes, chief of which is arterio-phlebo-capillo-sclerosis or fibrosis, and not the least of which are vessel changes from high myopia.

Changes in the blood may be produced by an infinite variety of causes—from anæmia and albuminuria along the alphabetical list of diseases characterized by blood changes down to uræmia and yellow fever.

Changes in the stroma of the vitreous, retina, ciliary body, or chorioid may arise—just how extensive these changes may be one can judge by looking at an old case of general chorioiditis. Finally, changes in vessel tension may arise from manifold causes—changes from a slight hyperæmia within the vessels to an apoplexy, or to a severe hæmorrhage following a cataract extraction, or an iridectomy for glaucoma. This brief review shows how many causes tend to produce a condition of which an opacity in the vitreous is a symptom.

I should like to present two instructive cases of opacities in the vitreous—instructive in that the first patient is almost blind from a hæmorrhage following high myopia, while the second is absolutely blind from sudden and unexplainable hæmorrhage.

Mr. A., sixty-eight years old, has been wearing myopic glasses (— 10) for thirty years; his sight has been failing for six years until it is about destroyed; he has not seen an oculist for six years; examination shows right eye absolutely blind; lens transparent, vitreous entirely filled with great black masses; tension + 2. Left eye: counts fingers with — 8 spherical at four feet; examination shows extensive chorioidal changes with posterior staphyloma and increased tension.

Mr. Y., thirty-five years old, in good health, with no specific history. In June, 1891, his left eye was "slightly inflamed" and an oculist was consulted, who ordered "dark room for ten days, leeches, and iodide of potassium," with the cheering news that the eye would be all right. He left the oculist soon after, and in September, testing the eye accidentally, he found it was entirely blind; at no time had he suffered the slightest pain, and he was, of course, greatly disturbed and surprised at his discovery. A skilled oculist in New York diagnosticated "hyalitis" and prescribed iodide of potassium. He continued under the observation of this physician for two years without any improvement, when he stopped all treatment, grateful that his right eye was perfect.

In December, 1896, he started for Boston, feeling perfectly well; the second day there, while being shaved, "he noticed something shoot down the right eye, which looked blood-red by the electric light; sitting up, the mass seemed to go down and not to trouble him." The next week, as the red floating bodies seemed to increase, he consulted an oculist, who diagnosticated "hæmorrhage into the vitreous" and ordered iodide of potassium; these opacities grew blacker and blacker until by December his sight was gone, though he was attended by skilled oculists.

A study of these two cases is of value, showing, as they do, the alpha and the omega of vitreous opacity: the alpha in the young man, in his prime, with good family and personal history, with nothing to explain the hæmorrhage, except possibly a hyperæmia pressing against weak vessel walls—certainly an unusual and a distressing accident.

The omega in an old gentleman with high myopia, resulting in posterior staphyloma, chorioidal changes, severe hæmorrhage, detached retina, and absolute blindness in the right eye; the left eye, full of chorioidal changes, slowly but surely following the right eye to blindness, through chorioiditis with profuse hæmorrhage and resulting glaucoma.

It is not the purpose of this article to discuss the sequelæ or the treatment of opacities in the vitreous.

244 Lenox Avenue.

AN INTERESTING CASE OF ACUTE BRIGHT'S DISEASE.

By JOSEPH A. SILVERMAN, Ph. G., M. D.,
BUTTE, MONT.

Saturday evening, June 29th, Dr. H., of this city, attended an entertainment and sat in an open window, with a draught blowing directly on his back. He was suddenly taken with a violent "cramp" in his neck, along the course of the sterno-cleido-mastoid muscle, but thought nothing more of it. The next day, while attending to his duties, he was seized with a malaise, and upon taking his temperature he found it to be 103° F. He immediately went home and to bed, first having taken a dose of quinine hydrochloride. The doctor having suffered for some years with internal and external piles, which were easily replaced in the rectum, found that after having taken a small dose of calomel he could not replace the piles as usual, and that they were much swollen and enlarged. He sent for a physician to do something for them, at the same time telling the physician of his temperature and malaise. The physician immediately prescribed five grains of salol to be given every two hours, and injected the external piles with pure carbolic acid. The next day the patient was suddenly taken with heart failure, and the attending physician was immediately sent for. He came some hours later, and found his patient very much collapsed and with no pulse at the wrist. With hypodermic injections of digitalin and strychnine he succeeded in a few days in bringing the heart almost to its normal state, the temperature gradually subsiding to 101° F. The patient now noticed that he was having some difficulty in passing his urine, that it came in small quantities, and in a short time he was compelled to use a catheter, which he had no trouble in passing, but only getting about a tablespoonful of urine. Simultaneously with the absence of urine the patient complained of great itching in the piles. The itching spread all over his body, and upon examination of his body the skin was found to be covered with an eruption resembling very much the eruption of urticaria—large red wheals and blotches—which itched very much. To relieve the itching of the piles the patient placed thereon a piece of gauze saturated with a strong solution of cocaine and took a hot bath, which brought a flow of urine, the eruption of the skin disappearing at the same time, but the heart failed rapidly from the effects of the cocaine, and the patient was thought to be dying. The attending physician again administered the digitalin and strychnine and the heart returned to almost a normal condition, but the patient still suffered alternate attacks of lack of a diuretic flow and the eruption, which at first left petechial spots after disappearing.

On Friday evening, July 16th, I was called in and upon questioning the patient got the history related above. I found him suffering from the eruption and was told that he had passed only about three or four ounces of urine in the past twelve hours. The hands and ankles were swollen and the eyelids puffed. He complained of headache, backache, flashes of light from the eyes, and dizziness, and I immediately made a diagnosis of acute nephritis, taking a specimen of the urine with me, but prescribing five-grain doses of acetate of potassium, to be given every three hours, and a tablespoonful of the infusion of digitalis, three times a day. I then went to my office and examined the urine. It was highly loaded with albumin and contained about a quarter of one per cent. of sugar. Upon visiting my patient that evening I found that the eruption had disappeared and that he had passed considerable urine voluntarily. I then prescribed a milk diet, hot baths, and a hot-water bottle over the kidneys, and substituted ten drops of the tincture of juniper berries for the potassium acetate.

Saturday, July 17th.—Upon seeing my patient I learned that he had had a good night, and had passed about thirty-five ounces of urine in the twelve hours; there was no eruption, and the headache and backache had left him. I ordered the treatment continued. The urine showed a much smaller quantity of albumin and no sugar.

Sunday, July 18th.—Found my patient resting easy. Quantity of urine almost normal and very small traces of albumin; no itching or eruption; no elevation of temperature; pulse, 100.

Monday, July 19th.—Patient much improved and wished to sit up. Quantity of urine normal, no albumin, no sugar, and no other symptoms. Piles had become smaller and could again be replaced, although much burned by carbolic acid and sloughing.

Never having seen or read of such a case, I thought it might be interesting to my colleagues.

A Resumption of Practice.—Dr. John Aulde, of Philadelphia, announces that he has resumed general practice at No. 1513 Arch Street.

Therapeutical Notes.

Erodium Cicutarium as a Hæmostatic.—The *Indépendance médicale* for September 15th remarks that this plant is a powerful hæmostatic and causes uterine contractions. It gives the following prescription for the treatment of metrorrhagia dependent on endometritis:

℞ Soft aqueous extract of erodium cicutarium	1 part;
Syrup of peppermint	15 parts;
Distilled water	75 "

M. A tablespoonful to be taken every two hours.

A Digestive and Stimulant Cachet.—The following formula is given in the *Progrès médical* for September 18th:

℞ Powdered St. Ignatius's bean	0.45 of a grain;
Pepsin	4.50 grains;
Maltine	1.50 grain;
Fresh powder of kola nut	3 grains.

M. Such a cachet to be taken with breakfast and dinner, in the middle of the meal.

A Spray for Pharyngitis Sicca.—The following formula is given in the *Progrès médical* for September 18th:

℞ Carbolic acid	60 grains;
Tincture of iodine	0.45 of a grain;
Tincture of aloes	0.60 " "
Tincture of opium	10 drops;
Glycerin......enough to make	1 ounce.

M. To be used as a spray several times a day.

An Antigalactic Mixture.—The Quebec *Revue médicale* for September 22d attributes the following formula to "M. Blgom":

℞ Atropine sulphate	0.45 of a grain;
Magnesium sulphate	3 ounces;
Infusion of gentian	7.5 "

M. S.: A tablespoonful every two hours.

Airol in the Treatment of Ophthalmia Neonatorum.—Ardin-Delteil, an interne of the Montpellier hospitals, gives in the *Presse médicale* for September 15th the particulars of a case in which he used this formula:

℞ Airol	1 part;
Vaseline	20 parts.

M. A little of this ointment was smeared on to the eyelids twice a day and wiped off in ten minutes. The eyes were bathed every half-hour. Improvement began within the first twenty-four hours, and the child was speedily cured.

Linadine as a Substitute for Cod-liver Oil.—Linadine is said in the *Indépendance médicale* for September 15th, on the authority of Barell, to be a physiological product extracted from the spleen, a brown, inodorous powder rich in phosphoric acid, iron, and iodine. The dose is not mentioned.

The Action of Quinosol on the Plague Bacillus.—According to the *Deutsche Medizinal-Zeitung* for September 20th, C. G. Moor, of King's College, London, has found that the bacillus is destroyed in ten minutes by a 1-to-2,000 solution of quinosol, and in an hour by a 1-to-3,000 solution.

Salophene in Skin Diseases.—Wannemacker (cited in the *Journal de médecine de Paris* for September 19th) has found salophene prompt and efficient in allaying the itching of various skin diseases. The ordinary daily amount to be given is a drachm.

The Treatment of Sexual Atony in Women.—The *Therapeutic Gazette* for September takes the following formula from the *Journal de médecine de Paris*:

℞ Extract of cannabis indica, Extract of nux vomica, } each	30 grains;
Aqueous extract of aloes	7 "

M. Divide into a hundred pills, of which three are to be taken daily.

A Gargle for Lacunar Amygdalitis.—We find the following formula in the *Presse médicale* for September 11th:

℞ Beech creosote	8 drops;
Tincture of myrrh, Glycerin, } each	900 grains;
Water	1,800 "

M.

Sulphonal in the Treatment of Acute Mania.—Kadt, according to the *Presse médicale* for September 11th, has had good results from the use of the following formula:

℞ Sulphonal	15 grains;
Sodium bicarbonate	4 "

M. For one cachet. From one to three such cachets are to be taken daily. In rebellious cases he gives much larger amounts—from sixty to seventy-five grains a day.

An Ointment for Chapped Hands.—The *Therapeutische Wochenschrift* for September 12th gives the following formula as Steffen's:

℞ Menthol	10 grains;
Salol, Olive oil, } each	20 "
Lanolin	675 "

M.

Mentholated Collodion in the Treatment of Contusions.—The *Journal de médecine de Paris* for September 12th attributes the following formula to Namé:

℞ Menthol	from 3 to 6 parts;
Collodion	" 24 " 27 "

M. S.: To be painted on once or twice a day. It is said to relieve the pain promptly and, by the contractile action of the collodien, to hasten the absorption of the effusion, provided it is not a joint that has been bruised.

Methylene Blue in the Treatment of Chronic Cystitis.—The *Revue médicale*, of Quebec, for September 15th attributes the following formula to Jays:

℞ Methylene blue	1.20 grain;
Powdered Venice talc	1.80 "
Lanolin	a sufficiency.

M. For one pill. From two to four such pills are to be taken in the course of a day.

An Application for Pityriasis Versicolor.—*Lyon médical* for September 5th credits the *Gazette des hôpitaux* with this formula:

℞ Corrosive sublimate	1 part;
Green soap	80 parts;
Oil of lavender	4 "
Tincture of lavender	120 "

M. S.: To be rubbed on the affected part, and a full bath to be taken three days afterward.

The Indications for the Use of Colchicum in Gout and Rheumatism are given by H. Schulz (*Wiener medicinische Presse*, 1897, Nos. 31, 32, and 33; *Therapeutische Wochenschrift*, September 12, 1897) as follows: Fever, great tenderness of the affected parts, decided sweating, increased thirst, very concentrated urine, accelerated breathing, and overaction of the heart.

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LARYNGEAL STENOSIS AND INTUBATION.

The use of the O'Dwyer tube seems to be productive occasionally of laryngeal stenosis. On the other hand, in some cases of stenosis from other causes it has been found remedial. In the Section in Pædiatrics of the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chirurgie*, September 16th) Dr. Bokai, of Budapest, stated that he had treated several cases of stenosis of the larynx, some due to chronic inflammatory affections of the organ, and others consequent on operations performed on the glottis or on the lower part of the larynx, and in their treatment he had employed intubation exclusively, and always with O'Dwyer's tube. All the patients had been relieved or cured. One of the children had had to be intubated frequently for a period of nearly a year. Similar cases, Bokai remarked, had been reported by Galatti, of Vienna, and recently by O'Dwyer himself. With patience, he added, tracheotomy could be avoided in these cases, and prolonged intubation was the treatment to be chosen in laryngeal stenosis, acute or chronic.

Heubner, of Berlin, dissented from this view. The prolonged passage of tubes must, he thought, aggravate any ulcerations that might be present; moreover, in such cases the tubes were apt to be ejected, and that involved the danger of suffocation and might require tracheotomy *in extremis*.

Boulay, of Paris, reported two cases of cicatricial stenosis consecutive to intubation, but he did not think that either of them could be imputed to the use of the tube; there were other cases in which stenosis followed acute laryngitis, which was frequent in infancy. There were two sorts of stenosis of the lower part of the larynx, he said. One kind followed ulceration produced by the pressure of the tube, and was rebellious to treatment; the other kind resulted from infiltration of the mucous membrane that had become chronic. Stenosis might come on after tracheotomy and be cured by intubation.

Sevestre, of Paris, remarked that, while as a general thing the sequelæ of intubation were very simple, occasionally there was a little trouble in doing away with the tube for good. He thought that this was particularly frequent after croup complicated with bronchopulmonary infection.

Bayeux, of Paris, called attention to the fact that all observers were agreed that the majority of cases of stenosis occurred in children that had expelled the tube frequently and somewhat rapidly during the treatment. He thought that a capital distinction should be made among these stenoses on the basis of topography. Some of them, he said, were seated below the glottis, near the angle of the inferior vocal cords; others—and they were the gravest—were situated at a lower level, that of the cricoid cartilage. At this point, as he thought he had been the first to show, the larynx was the narrowest. This narrowness and inextensibility should teach us, he continued, that repeated expulsions of the tube are symptomatic of ulceration, with more or less necrosis, of the cricoid portion of the larynx. This portion should serve as the gauge for the size of the tube to be used, which would vary according to the child's age. He believed that neither a prolonged course of intubations nor simple tracheotomy was sufficient in the treatment of stenosis; it was better to do crico-tracheotomy at once, since it was the cricoid portion of the larynx that was injured and offered an impediment to catheterism. In this way he had treated two cases, and with speedy success.

THE TRICHOCEPHALUS DISPAR AS A BLOOD SUCKER.

Some interesting observations have been made by Askanazy (*Deutsches Archiv für klinische Medicin*, lvii, 1, 2; *Deutsche Medizinal-Zeitung*, September 6th) in an endeavor to account for the brown coloration of the intestinal canal of this parasite, which depends on the liberation of numerous brown pigment granules in the epithelium of the canal. He finds that if one of these worms is laid first in artificial serum and then in diluted hydrochloric acid, the entire intestine appears to the naked eye as a dusky-blue stripe, and that under the microscope granules of an intense blue color are seen filling the intestinal epithelium. It follows, therefore, he says, that the worm has constantly in its intestinal epithelium a pigment containing iron. This pigment is found in the intestinal epithelium and nowhere else, and it shows that the worm ingests hæmoglobin or red blood-corpuscles. To ascertain whether or not the worm bored actively into the intestinal mucous membrane of its host, the author imbedded an affected portion of intestine in celloidin and examined it in series of sections stained with hæmatoxylin and eosine or with alum and carmin. The microscopical examination showed that all the worms that clung fast to the intestinal wall had actually bored into the mucous membrane with a part of their threadlike body. The relation of the parasite's posture to preexisting canals could not be made out, but it was evident that the animal had buried itself under the surface, going through the stroma and into a glandular sac. The extent of mucous membrane penetrated was a millimetre or less.

The author considers it still doubtful whether the parasite consumes the red blood-corpuscles, which possess the property of changing their shape and, by virtue of their elasticity, passing through narrow passages, or only the hæmoglobin. He says that when, in post-mortem examinations, the trichocephalus is found free in the intestine it has emerged from the mucous membrane since the death of its host; and the sooner after death the examination is made the more certainty there is of finding the worms fast in the mucous membrane. In an examination made four hours after death he found almost all the worms present, about forty in number, implanted in the mucous membrane, whereas in an examination made forty hours after death all the worms, a hundred and fourteen, were found free in the intestine. The reason why the parasites leave the mucous membrane after the death of the subject is, of course, he says, that it no longer contains any circulating blood. If it is true, he continues, that these worms are of no great pathological significance, the fact is due to their generally being present in the intestine in small numbers only. It is noteworthy, he adds, that in the dog the *Trichocephalus depressiusculus*, hundreds of which may be found in the cæcum, is capable of giving rise to severe pernicious anæmia.

MINOR PARAGRAPHS.

THE VULVO-VAGINAL GLAND.

Dujon (*Thèse de Paris,*1896; *Centralblatt für Gynäkologie*, September 18, 1897) says that Bartholin's gland is the analogue of Cowper's gland in the male, that it is a genital gland, and that it is closely connected with the rest of the genital apparatus, especially the ovary. This, he says, is shown by the fact that many women who have suffered bilateral loss of the uterine annexa are troubled with dryness of the vulva and vagina due to atrophy of the vulvo-vaginal gland.

THE PHAGEDÆNIC ULCERS OF HOT COUNTRIES.

Dr. J. Breult (*Annales de dermatologie et de syphiligraphie*, viii, 2; *Centralblatt für Chirurgie*, September 18, 1897) recounts that in the Madagascar expedition the Arabs and Kabyls suffered with uncommon frequency with the phagedænic tropical sore, especially on the lower limbs, while the Somalis and Sudanese, as well as the regular troops, who were better equipped, were almost entirely free from it. It ran a particularly unfavorable course when complicated with moist gangrene and hospital gangrene. By energetic treatment, especially operative procedures and the employment of antiseptic dressings, the author obtained comparatively good results. In view of the demonstrated predisposition of the Arabs and Kabyls, their indolence and filth, he holds it to be quite possible that the tropical sore is smuggled into their homes by them when they are not perfectly cured, and serves as the starting-point of epidemics.

THE CURE OF A REBELLIOUS CASE OF GASTRIC BORBORYGMUS.

Veire (*Gazette des hôpitaux*, August 3, 1897; *Lyon médical*, September 12, 1897) relates the case of a girl, fifteen years old, who was troubled with gastric borborygmus with each respiratory movement, loud enough to be heard in an adjoining room. At the end of four or five hours the gas would escape by the mouth, and the noise would cease, but it would come on again as soon as she took the least thing, even a drink of water, into her stomach. All treatment had proved unavailing. Veire diagnosticated dilatation and ptosis of the stomach and prescribed Glénard's belt. A month later the girl and her mother reported that the sounds had ceased immediately on the application of the belt, and had not recurred.

BIRDS IN A HOSPITAL.

The *Progrès médical* for September 18th says that one of the surgical wards on the ground floor of the Middlesex Hospital, in London, is known as the "Bird Ward," and states that a lady who had been admitted to treatment in that ward in an emergency reflected, on leaving the hospital, that the lot of a hospital patient was rather cheerless, in spite of the nurses' delicate attentions, and sought and obtained permission to send birds to the ward. In consequence, a score of the beds are now surrounded with large bird-cages, and all the songs of the forest greet the patients' ears. It is one of the prettiest forms of beneficence conceivable, says the *Progrès*.

MALIGNANT PUSTULE.

M. Le Roy des Barres seems to have had an exceptional experience with this disease. He lately reported to the Paris Academy of Medicine (*Progrès médical*, September 18th) that in the course of a number of years he had observed seventy-two cases among the hair-workers and leather-dressers of Saint-Denis. The pustules had been seated sixty-seven times on the lip, four times on the eyelid, and once on the penis. The treatment employed had been with applications of Paquelin's cautery, injections of iodized water around the pustule, dressing with oxygenated water, and inhalations of oxygen. Of his seventy-two cases, sixty-two had ended in recovery. He laid stress on resorting to the treatment as early as possible.

CATHETERISM OF THE FRONTAL SINUSES.

At the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chirurgie*, September 16th), Dr. Scheier, of Berlin, remarked that authors were not yet agreed as to the facility of catheterism of the frontal sinuses; while some were convinced that catheterism by the natural passages was always possible, others thought that it was very difficult or impossible without a preliminary operation. The question was all the harder to solve because until now, on the living subject, we had had no means of knowing whether the instrument had entered the frontal sinus or an ethmoidal cell. To settle it, he had taken Röntgen-ray pictures of thirty persons on whom he had practised the procedure, and had found that in only five of them had the instrument penetrated into the sinus.

A PEWTER-CLAD CORNEA.

Heidenreich (*Norsk Magazin for Lägevidenskaben*, 1896, No. 1; *Deutsche Medizinal-Zeitung*, August 9, 1897) relates the case of a boy who melted some pewter in a gun-barrel. The gun must have contained powder, for soon a smart explosion took place, and some of the pewter was driven into the boy's eye, where it spread out over the whole cornea, to which it was found adhering. It was removed under anæsthesia, and the damage to the cornea was seen to be very slight. In ten days the eye was perfectly normal. A lotion of atropine and corrosive sublimate was used.

THE NEW YORK PHYSICIANS' MUTUAL AID ASSOCIATION.

Fresh evidence of this beneficent body's prosperity is shown by the treasurer's announcement that the surplus fund has been sufficient to meet the last two death claims, without any assessment. For a period of nearly three months, from June 12th to August 29th, there were no deaths, and the membership has grown rapidly. Every physician in the State ought to be a member.

MALARIAL PARALYSIS OF THE BLADDER.

Marion (*Semaine médicale*, 1897, No. 10; *Monatsberichte über die Gesammtleistungen auf dem Gebiete der Krankheiten des Harn- und Sexual-Apparates*, ii, 8) reports six cases of paralysis of the bladder occurring in the course of malarial affections. The patients were all men, and mostly those past middle life. Sometimes the paralysis came on in the course of malarial fever; in other instances it was the first symptom of malarial infection. Once it had appeared, it did not subside until the malarial trouble was entirely cured, and then it disappeared as suddenly as it had set in.

THE NEW YORK STATE MEDICAL ASSOCIATION.

The continued vigor and usefulness of this organization were strikingly manifested at the meeting which was held in New York this week. The attendance was large and fully representative of the profession throughout the State, and the addresses, papers, and discussions were up to the high standard to which the association has always adhered.

CLANDESTINE PROSTITUTION AND SYPHILIS IN MOSCOW.

Before the Section in Dermatology and Syphilography of the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chirurgie*, September 16th), Dr. Serebriakoff, of Moscow, stated that the number of clandestine prostitutes in that city was increasing annually. After the first examination, sixty-six per cent. of them eluded surveillance. Many of them had already spent some time in *maisons de tolérance*. When they were diseased, but still at large, they soon propagated venereal diseases. About fifty per cent. of them were treated for syphilis in the municipal hospital, and about fifty-two per cent. of them had syphilis.

HYSTERIA AS AN IMPEDIMENT TO THE DIAGNOSIS OF PERITYPHLITIS.

Rendu (*Gazette des hôpitaux*, 1897, Nos. 40 and 43; *Centralblatt für innere Medicin*, September 4, 1897) relates two cases in which the signs of perityphlitis were so counterfeited by hysteria that an operation was thought necessary to establish the diagnosis. In one of them the mimicry persisted after abdominal section; in the other it did not. He thinks that an operation should not be done in cases in which there is no fever, no matter what the other signs may be.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 12, 1897:

DISEASES.	Week ending Oct. 5.		Week ending Oct. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	30	8	43	4
Scarlet fever	87	6	118	4
Cerebro-spinal meningitis	0	1	0	0
Measles	64	1	69	4
Diphtheria	134	35	153	26
Croup	7	3	8	3
Tuberculosis	158	113	203	105

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending October 9, 1897:

Yellow Fever—United States.

Alco, Ala.	Oct. 8.	1 case.	
Mobile, Ala.	Oct. 1–8.	4 cases.	
New Orleans, La.	Oct. 1–8.	277 “	22 deaths.
Biloxi, Miss.	Oct. 1–8.	111 “	5 “
Clinton, Miss.	To date (Oct. 8)	10 “	1 death.
Edwards, Miss.	Oct. 1–8.	118 “	11 deaths.
Henderson's Point, Miss.	Oct. 7.	3 “	
McHenry, Miss	Oct. 1–5.	2 “	
Nitta Yuma, Miss.	Oct. 3–8.	9 “	
Ocean Springs, Miss.	Oct. 1–6.	0 “	
Scranton, Miss.	Oct. 1–8.	68 “	2 deaths.

Yellow Fever—Foreign.

Para, Brazil.	Sept. 11–18.		3 deaths.
Cardenas, Cuba.	Sept. 11–25.		5 “
Matanzas, Cuba.	Sept. 22–29.		3 “
Santiago, Cuba.	Sept. 18–25.		10 “
Kingston, Jamaica.	Aug. 28–Sept. 18.	5 cases,	4 “
Mazatlan, Mexico.	Sept. 25–Oct. 2.		9 “
Panama, U. S. of Colombia.	Sept. 13–23.	1 case,	1 death.

Cholera—Foreign.

Bombav, India.	Sept. 7.		37 deaths.
Calcutta, India.	Aug. 21–28.		5 “
Madras, India.	Aug. 28–Sept. 3.		21 “
Osaka and Hiogo, Japan.	Aug. 28–Sept. 4.	2 cases,	1 death.

Plague—Foreign.

Bombay, India.	Sept. 1–7.		33 deaths.

Small-pox—United States.

Bessemer, Ala.	Sept. 25–Oct. 2	1 case.	

Small-pox—Foreign.

Prague, Bohemia	Sept. 11–18	2 cases.	
Montreal, Canada	Oct. 1–6	1 case.	
Alexandria, Egypt	Aug. 13–26		1 death.
Cairo, Egypt	Aug. 13–26		2 deaths.
Sheffield, England	Sept. 11–18	1 "	
Calcutta, India	Aug. 21–28		1 death.
Madras, India	Aug. 28–Sept. 3		2 deaths.
Glasgow, Scotland	Sept. 11–18		2 "
Barcelona, Spain	July 1–31		26 "
Madrid, Spain	Sept. 7–14		2 "
Moscow, Russia	Sept. 4–11	1 "	
Warsaw, Russia	Sept. 11–18		5 "

The Medical Association of Central New York.—The thirtieth annual meeting will he held in Buffalo on Tuesday, October 19th, under the presidency of Dr. Edward B. Angell, of Rochester. In addition to the president's address, the following papers will be read:

The Cause and Prevention of Sudden Death after Fifty, by Dr. Sidney A. Dunham, of Buffalo; Late Additions to our Knowledge of Certain Parasitic Affections of the Skin, by Dr. Frank J. Thornbury, of Buffalo; A Case of Unusual Defective Development in an Infant—Consisting of Compound Complicated Harelip and Bilateral Maxillary Fissure, together with Attachment of the Intermaxillary Bone to the End of the Nose; Correction of this Deformity by Plastic Operations, by Dr. John O. Roe, of Rochester; The Value of Expert Testimony in Medico-legal Cases—From the Medical Standpoint, by Dr. A. W. Henckell, of Rochester — From the Legal Standpoint, by Tracy C. Becker, Esq., of Buffalo; The Treatment of Congenital Dislocation of the Hip by the Lorenz Method, with Radiograph Illustrations, by Dr. L. A. Weigel, of Rochester; The Use of the Fluorometer in Röntgen-Ray Work, by Mr. John Dennis, of Rochester; The Surgical Treatment of Tuberculous Peritonitis, by Dr. J. P. Creveling, of Auburn; The Adirondacks in Winter for Tuberculous Patients, by Dr. Sargent F. Snow, of Syracuse; A Plea for Local Anæsthesia in the Removal of Large Abdominal Tumors in the Aged, with the Report of a Case, by Dr. Henry T. Williams, of Rochester; A Case of Appendicitis with Unusual Sequelæ, by Dr. Nathan Jacobson, of Syracuse; Removal of the Uterus in Pelvic Disease, by Dr. C. C. Frederick, of Buffalo; Clinical Reports with Specimens, by Dr. Henry L Elsner, of Syracuse; A Report of a Case of Jacksonian Epilepsy, by Dr. F. H. Stephenson, of Syracuse; Some Popular Errors in the Treatment of Nervous Prostration, by Dr. B. C. Loveland, of Clifton Springs; Hysteria and Brain Tumors, by Dr. William C. Krauss, of Buffalo; Carcinoma of the Testicle, by Dr. A. A. Young, of Newark; The Ocular Headache as an American Disease, by Dr. Lucien Howe, of Buffalo; The Uses of the Stomach Tube in the Practice of General Medicine, by Dr. John A. Lichty, of Clifton Springs; The Relation of Hydrochloric-acid Secretion to Indicanuria, by Dr. Allen Jones, of Buffalo; Auto-intoxication, by Dr. William D. Wolff, of Rochester; Certain Cardiac Affections in Relation to Life Insurance, by Dr. John H. Pryor, of Buffalo; Stricture of the Urethra, by Dr. J. Henry Dowd, of Buffalo; and The Overdressing of Children, by Dr. W. M. Brown, of Rochester.

The Wyoming County, N. Y., Medical Association.—At the last quarterly meeting, on Tuesday evening, the 12th inst., the programme included the following papers: The Treatment of Tuberculous Osteitis of the Knee, by Dr. Bernard Bartow; Diagnosis, by Dr. George M. Palmer; and Purulent Pleurisy, by Dr. A. Harding.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 9th inst., the following papers were to be read: The Definition and Causes of Spermatorrhœa, by Dr. Bransford Lewis; The Effects of Spermatorrhœa, by Dr. Keating Bauduy; and The Treatment of Spermatorrhœa, by Dr. H. M. Phillips.

The Medical Society of the County of Broome, N. Y.—The annual meeting was held in Binghamton on Tuesday, October 5th, under the presidency of Dr. B. E. Radeker, of Deposit. Besides the president's address, the programme included the following papers: A Case of Chronic Abscesses following Typhoid Fever, by Dr. J. D. Appley, of Harpursville; Chorea Complicating Pregnancy, by Dr. W. S. Overton, of Binghamton; Hypnosis and the Phenomena of Consciousness, by Dr. W. A. White, of Binghamton; and Cancer of the Breast, with a Report of Two Cases, by Dr. L. D. Farnham, of Binghamton.

The Society of Medical Jurisprudence.—At the last regular meeting, on Monday evening, October 11th, the special order was a paper on Mental Unsoundness as Affecting Testamentary Capacity, by Jacob Shrady, Esq., of the New York Bar.

The Buffalo Academy of Medicine.—At the next meeting of the Section in Pathology, on Tuesday evening, the 19th inst., a paper entitled Recent Researches in the Pathology of Trichophytosis will be read by Dr. William Thomas Corlett, of Cleveland, Ohio.

Changes of Address.—Dr. Irving S. Haynes, to No. 1125 Madison Avenue, New York; Dr. L. Emmett Holt, to No. 14 West Fifty-fifth Street, New York; Dr. A. Stanton Hudson, to No. 35 Hollis Street, suite 1, Boston; Dr. Walter B. James, to No. 31 West Fifty-fourth Street, New York; Dr. C. J. Laffin, to No. 1536 Madison Avenue, New York; Dr. Roy, from Walkerton, Indiana, to Buchanan, Michigan; Dr. Henry Ling Taylor, to No. 71 West Fifty-fifth Street, New York; Dr. Walter L. Pyle, to the Professional Building, Nos. 1831 to 1833 Chestnut Street, Philadelphia.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 2 to October 9, 1897:*

Ball, Robert R., Captain and Assistant Surgeon, died October 5th, in Washington, D. C.

Fuller, Leigh A., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Meade, South Dakota, and ordered to Fort Assinniboine, Montana.

Glennan, James D., Captain and Assistant Surgeon, is relieved from duty at Fort Clark, Texas, and ordered to Fort Myer, Virginia.

Johnson, Richard W., Captain and Assistant Surgeon, is ordered to proceed from Fort Logan, Colorado, to Fort Douglas, Utah, and report for temporary duty.

Kirkpatrick, Thomas J., Jr., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month.

McCreery, George, Captain and Assistant Surgeon, is relieved from temporary duty at the United States Soldiers' Home, Washington, D. C., and ordered to Fort Myer, Virginia.

Mearns, Edgar A., Captain and Assistant Surgeon, is relieved from duty at Fort Myer, Virginia, and ordered to Fort Clark, Texas.

Munson, Edward L., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Assinniboine, Montana, and ordered to Fort Adams, Rhode Island.

Strong, Norton, Captain and Assistant Surgeon. The order assigning him to duty at Fort Myer, Virginia, is revoked.

Promotion.

Powell, Junius L., Captain and Assistant Surgeon, to Surgeon, with the rank of Major, October 1, 1897, vice Brown, retired.

Retirement.

Brown, Paul R., Major and Surgeon, October 1, 1897, for disability incident to the service.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending October 9, 1897:*

Babin, H. J., Medical Inspector. Ordered as president of the Naval Examining Board, New York. October 9th.

Bates, N. L., Medical Director. Detached from the Museum of Hygiene and ordered to duty as Chief of the Bureau of Medicine and Surgery.

Hesler, F. A., Passed Assistant Surgeon. Detached from the United States Steamer Philadelphia and ordered to the United States Steamer Baltimore.

Pryor, J. C., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, and ordered to the United States Steamer Adams.

Smith, R. K., Assistant Surgeon. Detached from the United States Steamer Philadelphia and ordered to the United States Steamer Baltimore.

Tryon, J. R., Medical Director. Detached from the Bureau of Medicine and Surgery and ordered to New York as General Inspector of United States Naval Hospitals.

White, C. H., Medical Director. Detached as president of the Naval Examining Board, New York, October 9th, and ordered to Washington in charge of the Naval Museum of Hygiene.

Wise, J. C., Medical Inspector. Detached from the United States Steamer Philadelphia and ordered to the United States Steamer Baltimore.

Society Meetings for the Coming Week:

Monday, *October 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

Tuesday, *October 19th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings, St. Lawrence (semiannual), and Westchester (White Plains), N. Y.; Hunterdon, N. J., County Medical Society (Flemington); Baltimore Academy of Medicine.

Wednesday, *October 20th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *October 21st:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private).

Friday, *October 22d:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *October 23d:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

Brady—O'Donnell.—In Buffalo, on Wednesday, September 15th, Dr. Bernard H. Brady and Miss Agnes Barbara O'Donnell.

Ernst—McCormick.—In New Orleans, on Saturday, September 25th, Dr. O. F. Ernst and Miss Katherine McCormick.

Forbes—Mack.—In New York, on Wednesday, October 6th, Dr. Henry Hall Forbes and Miss Jean P. Mack.

Kerwin—Faucett.—In New York, on Wednesday, October 6th, Dr. John J. Kerwin and Miss Marguerite Alice Regina Faucett.

Myers—Hawley.—In Ridgefield, Connecticut, on Wednesday, October 6th, Dr. T. Halsted Myers, of New York, and Miss Sadie Hawley.

Pomeroy—Lachlan.—In Brooklyn, on Tuesday, October 12th, Dr. Ralph Hayward Pomeroy and Miss Isabella Lachlan.

Trimble—Jones.—In New York, on Tuesday, October 12th, Dr. I. Ridgeway Trimble, of Baltimore, and Miss Margaret Jones.

Died.

Anthony.—In Providence, Rhode Island, on Thursday, October 7th, Dr. Walter Eugene Anthony, in the fiftieth year of his age.

Ball.—In Washington, on Tuesday, October 5th, Dr. Robert R. Ball, United States Army.

Branin.—In Camden, N. J., on Wednesday, October 6th, Dr. Henry E. Branin.

Swett.—In Albany, on Sunday, October 3d, Dr. Joseph B. Swett, Jr., in the thirty-third year of his age.

Letters to the Editor.

TEETHING AND DIARRHŒA.

Grafton, West Virginia, *September 24, 1897.*

To the Editor of the New York Medical Journal:

Sir: I truly regret that my letter of August 7th provoked any such criticisms as a "lack of experience and judgment," especially when such criticisms reflect, with equal force, upon such men as the late Dr. J. Lewis Smith. I have nothing to say in defense of this criticism upon myself. I suppose, however, that my readers are perfectly competent to judge of my ability to reason, and so I gladly submit my thoughts to their judgment, however adverse this may be to me. As no sensible physician lays claim to infallibility, and hence any of us may err, it seems to me perfectly just and respectful to call in question the accuracy of the judgment of any member of the profession on any point in which we believe him to be in error. But this is vastly different from branding him with a "lack of experience and judgment." The true scientist is always benefited by having his errors pointed out, and every physician should be a scientist; but no searcher for the light of truth and reason is ever benefited by being told that he is "ignorant" or a "fool."

It seems to me that both of the cases cited by my critics lack sufficient evidence that the diarrhœas were caused by the teeth. Proximity alone is not sufficient evidence of cause and effect. The red, swollen gums, the hot, feverish condition, followed by a diarrhœa, and the magical disappearance of the diarrhœa, before any teeth appear, during teething, after all the teeth have appeared, in children, in adults, and in old persons who have lost all their teeth, I have observed in my own practice. The results in all these cases are very similar; and, in my judgment, the causes are the same. If the teeth are the cause in one instance, why not in all? It has been my observation that a catarrh or inflammation of any part of the alimentary canal is almost sure to extend, unless you quickly bring it under control. An enteritis in any person, and especially in an infant, because of its tender tissues, is quite likely to extend to the stomach and thence to the mouth, affecting the gums. If the teeth are the cause in one instance, why not in all?

The case of delayed dentition cited seems to me to be especially lacking in evidence, and the philosophical explanation decidedly erroneous. I have never seen a case of delayed dentition where there were not perceptible defects in the strength or formation of the bones. In the majority of my cases, I could clearly trace the delayed dentition to the lack of proper ingredients in the child's food or to the failure of assimilation, to get out of the food and properly apply the necessary bone-forming material. In such cases, the lactophosphate of calcium has served me an excellent purpose. It is my judgment that the delayed dentition is not the *cause* of the diarrhœa, but the *result*. In most of my cases of catarrh of the alimentary canal, especially beginning early in the hot season, one attack is very likely to follow another; certainly, one attack predisposes to another, and the physical powers are often put to their utmost to even save the life of the child. We all have cases where life is saved at the expense of other parts of the physical economy. If the teeth are the cause of the diarrhœa, why are not the defective bones also a cause, for they usually bear the most lasting evidences of defects? I certainly part company with my critics. Who is correct?

But these are not all of my objections to the "teething" theory of diarrhœa. My difficult cases have always been in the hot summer weather, and never in the winter; although my little patients have cut their teeth just as freely in winter as in summer, and I believe this is the universal rule. Also, my difficult cases have never been those of infants nursed entirely by a healthy mother, but of children who were either partly or entirely reared on artificial food, and often born of delicate mothers. There may be exceptions to this, but I believe it is the general rule of experience. If teething were a cause of diarrhœa, it would be just as effective in winter as in summer, just as universal in the children nursed entirely by their mothers as in those artificially fed. I appeal to the judgment of my readers for the truthfulness of my statement. Its force can not otherwise be denied. Even the exceptions, it seems to me, are in my favor. My next-door neighbor, for instance, has a little girl, eleven months old, who has now cut most of her teeth, has eaten fruit of all kinds during the entire summer, and has had no bowel trouble whatever. A physician in a neighboring town has brought up a large family and allowed them from their infancy to eat everything that came on the table, and always without harm. But this summer the father visited one of his sons, who is also a physician, and fed a nursing grandchild bread and meat-gravy. That night the child was taken with a diarrhœa, the first and only one it has had during the entire summer.

I do not believe that any physiological process is, *per se*, a disease-producing process. Menstruation and parturition are perhaps as near pathological processes as any other. But no competent gynæcologist maintains that either menstruation or parturition is the cause of disease. They may furnish the occasion for disease, but they are not the real cause. Dyspepsia is usually due to wrong methods of eating, which interfere with digestion. All diseases of menstruation, parturition, and digestion are caused by the interference with the physiological processes, and not by the process *per se*. Is "teething" an exception to this rule? It is stated that it is a real cause of disease, but I dispute it. Am I wrong?

My greatest objection to the "teething" theory of diarrhœa is that it satisfies both the physician and the parents before the real cause is discovered, so that it can be removed, and leads to a wrong method of treatment. All treatment in rational medicine and surgery is based upon this method of procedure: "First remove the cause, and then assist Nature to restore the patient to health." Our idea, then, of the nature of a disease and its cause must necessarily determine our method of treatment. If "teething" is the cause, it can not be removed, and I doubt the advisability of an attempt to treat it. Better dismiss the physician and remand the patient to the fates of Nature. But, if I am right, that all diarrhœas are due to causes which might be avoided and should be removed, then the real cause or causes should be accurately determined and removed as far as possible, when the best remedies to assist Nature out of her difficulty should be applied. This is not always easy, but it is the only proper course. Am I right or wrong?

The "teething" theory savors to me much of our popular superstitions, and so seems beneath the dignity of the medical profession. I will give but two instances: A child in a neighboring town failed to cut any of her teeth until nearly three years of age. As she was fairly healthy and suffered from no severe bowel trouble, "teething" or delayed dentition could not be judged to play any part in her case. But the popular superstition was not to be foiled, and it gave a theory which was almost universally accepted. It was remembered that the mother early in her pregnancy had laughed at a neighbor who had just had her teeth extracted. So it was decided that this was a clear case of maternal impression, and that the child never would have any teeth. But in time her teeth all appeared, and the popular theory was exploded.

During this summer, and in a time of abundance of rain, a neighbor's well suddenly failed, which had never done so before. The popular superstition, as usual, was equal to the occasion. He had paved a walk around his well two or three weeks before, and it was decided that he paved his walks in the wrong sign of the moon, which caused his well to go dry. But no scientist could accept any such explanation. We know that subterranean water courses often cut new channels, which change may supply an abundance of water to a formerly weak spring or well, or cause a formerly strong supply of water to fail. Shall we adopt the former or the latter method of explanation of disease?

These two examples, it seems to me, are fair samples of that mode of reasoning which sets down "teething" as the cause of diarrhœa. When we realize that the diarrhœas of infants are in the list of the most dangerous and fatal diseases which afflict the human race, are we doing right to base our treatment upon a popular fallacy or superstition which ignores the most fundamental principle of treatment known to scientific medicine? We must part company. Which course shall we take?

A. J. BAKER, M. D.

Book Notices.

A Handbook of Medical Climatology. By S. EDWIN SOLLY, M. D., M. R. C. S., Late President of the American Climatological Association. Philadelphia: Lea Brothers & Co., 1897. Pp. 470.

THE subject of climatology as applied to disease is of such recent development in this country that practitioners will welcome this admirable work by one whose study and personal experience through many years have peculiarly qualified him to discuss the matter from a practical standpoint. The scope of the work is such as to enable one to ascertain at a glance just where to advise a patient to go with the hope of benefit from climate, and, what is perhaps equally important, where not to go.

Much attention is given to the newer health resorts in the Western and Southwestern States, as well as to those of the Atlantic and Pacific seaboards. There are excellent general chapters upon the principles of medical climatology, the geographical distribution of disease, and classification of climates, followed by detailed discussion of the climatic treatment of tuberculosis, and of such non-tuberculous diseases as are amenable to climatic influences. Meteorological tables and admirable relief and colored maps add greatly to the interest of the book.

So much has been written upon foreign climatology that it is a pleasure to meet with a work so distinctively American in its application.

BOOKS, ETC., RECEIVED.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume III. New York and London: The Macmillan Company, 1897. Pp. xiv–3 to 1176. [Price, $5.]

Lectures on the Action of Medicine. Being the Course of Lectures on Pharmacology and Therapeutics delivered at St. Bartholomew's Hospital during the Summer Session of 1896. By T. Lauder Brunton, M. D., D. Sc. (Edin.), LL. D. (Hon.) (Aberd.), F. R. S., Fellow of the Royal College of Physicians, etc. New York and London: The Macmillan Company, 1897. Pp. xv–673. [Price, $4.]

Appendicitis and its Surgical Treatment. With a Report of Seventy-five Operative Cases. By Herman Mynter, M. D. (Copenhagen), Professor of Operative and Clinical Surgery in Niagara University, etc. Philadelphia and London: J. B. Lippincott Company, 1897. Pp. 3 to 303. [Price, $2.]

Atlas and Essentials of Bacteriology. By Professor K. B. Lehmann, Chief of the Hygienic Institute in Würzburg, and Dr. Rudolph Neumann, Assistant in the Hygienic Institute in Würzburg. With Sixty-three Chromo-lithographic Plates, comprising Five Hundred and Fifty-eight Figures, and Numerous Engravings. New York: William Wood and Company, 1897. Pp. vii–204.

The Fifteenth Annual Report of the Provincial Board of Health of Ontario for the Year 1896.

Medical Report of the Society of the Lying-in Hospital of the City of New York. 1897.

Twenty-first Yearbook of the New York State Reformatory. For the Fiscal Year ending September 30, 1896.

Annuaire de l'Université Laval pour l'année académique 1897–'98. No. 41.

A Clinical Study of the Ophthalmic Symptoms seen in a Case of Fracture of the Anterior Base of the Skull. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the *American Journal of the Medical Sciences.*]

Ophthalmoscopic Representation of a Case of Traumatic Rupture of the Inferior Temporal Vein of the Right Retina. By Charles A. Oliver, M. D. [Reprinted from the *Annals of Ophthalmology.*]

A Clinical and Histological Study of a Case of Epithelioma of the Corneo-scleral Junction. By Charles A. Oliver, M. D. [Reprinted from the *Archives of Ophthalmology.*]

The Clinical History of a Series of Operative Procedures for the Cure of Cicatricial Ectropium from Antral Disease. By Charles A. Oliver, M. D. [Reprinted from the *University Medical Magazine.*]

Clinical Notes of a Case of Injury producing as the most Prominent Symptom Luxation of the Eyeball into the Orbit. (So-called Traumatic Enophthalmos.) By Charles A. Oliver, M. D. [Reprinted from the *Ophthalmic Record.*]

The Clinical History of a Case of Subconjunctival Dislocation of the Crystalline Lens. By Charles A. Oliver, M. D. [Reprinted from the *Ophthalmic Record.*]

The Histology of Twenty-nine Cases of Primary Neoplasms in the Kidney. By H. B. Allen, M. D., and T. Cherry, M. D., of Melbourne, Australia. [Reprinted from the *Proceedings of the Intercolonial Medical Congress of Australasia.*]

Albinism. By W. H. Dalpe, B. A., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

On the Surgery of Bronchocele. By Francis J. Shepherd, M. D., of Montreal. [Reprinted from the *Practitioner.*]

A Case of Primary Sarcoma of the Pleura. By F. G. Finley, M. D., and W. I. Bradley, M. D., of Montreal. [Reprinted from the *Practitioner.*]

Miscellany.

"Adult Doses" for Sucking Pigs.—Last Sunday the *Sun* printed the following dispatch from Washington:

"That man who just passed is a friend of mine," said a popular naval officer, "and he meant no offense in calling me 'Piggy.' It is only a little pet name they have for me in the navy and I don't mind it in the least from those I know well.

"You see, it came to be given to me in this way: We had been ordered from Japan away around to the east coast of South America. The ship wasn't the fastest in the service even in those slow-going days, and to make matters worse we had been instructed to proceed under sail. I was caterer of my mess, a very important person, you may be sure, on account of the long voyage in prospect and the probability of a pretty miserable table before it was over if my resourceful qualities were not sufficient for the occasion. When we reached Honolulu I hurried ashore to lay in supplies. I had collected thirteen hundred dollars from the members of the mess and was happy in the belief that I would outcater any other caterer that the navy had ever known. While I was ashore I heard of a man who had some pigs for sale and the idea struck me that I could provide fresh pork for the long trip we were about to make. The thought of sitting down to fresh pork chops a month out from Honolulu was delicious. I was not selfish from an epicurean standpoint in the contemplation. It was of the compliments that would be heaped upon me by the other members of the mess that I was thinking. How my messmates would praise my longheadedness and how the members of other messes would envy us!

"Well, I purchased the pigs—ten of them. They were nice-looking little fellows, not very fat, but capable of being put in first-class condition for eating in a short while. Everybody in the mess congratulated me on my thoughtfulness, but there was just enough of sly suggestion that the pigs would not survive the voyage to make me nervous and put me on my mettle. I realized that my reputation as a caterer rested with those little porkers. Everybody on board ship took an interest in the success of my experiment.

"I put the pigs in charge of an old sailorman in whom I had confidence. He was told to give them careful attention and to watch for any signs of sickness. I knew that I could trust him implicitly, but so great was my concern for their welfare that I went to look at them every day. We killed and ate one and it was great. Then we ate three more and each tasted better than the others, for we were beginning to long for the good things of land. One day when I was just off watch and so tired that I wanted to turn in right away, the jacky who had charge of the porkers came and said:

"'If you please, sir, them pigs is a-lookin' sort o' peaked. I wish you'd come an' have a look at 'em, sir."

"Naturally, I was worried, and, tired as I was, I went to the pen. It was plain the pigs were not well. They showed it in their utter listlessness and in piteous little squeals. I did not know what to do at first. Then I thought of the doctor. I went to him and said:

"'Old man, you and I have been shipmates a long time, and I think I know you well enough to ask a professional favor.'

"'Go ahead, old man,' he answered. 'Don't be afraid to ask.'

"His words and manner encouraged me. You see, doctors are a little sensitive in professional matters, and I was afraid of offending him.

"'It's just this,' I said boldly, 'those pigs of mine are sick. I'm afraid they're in a bad way, and I wouldn't have anything happen to them for the world. Please don't take it amiss if I ask you to have a look at them.'

"He answered cordially, 'Certainly, I'll look at the pigs. I understand exactly how you feel about it.'

"'God bless you, old man,' I exclaimed fervently, grasping his hands in both of mine, and I led him to the pigs.

"After making a careful examination, the doctor relieved me very much by saying that there was nothing serious the matter, and that the pigs would be all right after he had given them a dose of medicine. When the apothecary had prepared the prescription, we went back to the pigs and poured the medicine down their throats and then, with an easy mind, I turned in.

"It must have been about two o'clock in the morning when the old jacky who cared for the pigs awakened me with the startling announcement that my charges were acting strangely. My first thought was that the doctor had played a trick on me. My indignation was strong as I shook him awake and told him to dress himself. While he dressed I said:

"'Doctor, you and I have been good friends, but if you have given anything to those pigs that you should not have given them, our friendship will end. If you have played a trick, hereafter we will not know each other.'

"He protested, with tears in his eyes, that he had not done anything to harm the porkers. 'Come with me,' I said, 'the truth will soon be known.'

"We reached the pigs just in time to see the surviving one of the six poor little fellows breathe his last. I turned to the doctor for an explanation.

"'What have you to say, sir?' I demanded. 'Do you know what this means to me, sir? You have caused the loss of six valuable pigs; you have forced my mess to be deprived of fresh meat for the rest of the voyage; you have made me the butt of the ship. I suppose that every one on board will be calling me "Piggy" before the going down of another sun.'

He looked at me in an appealing way.

"'Old man,' he said, and his voice broke. 'I did not play any trick on you, but I admit that I made a mistake. Forgive me, old man, it was all my fault—I gave them adult doses.'"

The Treatment of Tuberculosis with Cinnamic Acid.—Dr. T. Heusser, of Davos-Platz (*Therapeutische Monatshefte; Therapist*, September 15, 1897), writes as follows:

It must be admitted that during the last forty years the greatest efforts have been put forward in the struggle against tuberculosis. Continued effort has been incited by frequent cures of this disease, hitherto considered incurable, and hope has been stimulated by the discovery of the tubercle bacillus as the cause of the disease. Scarcely a modern phthisis specialist doubts, however, the superior value of the climatic and hygienic treatment of phthisis, founded by Brehmer, Dettweiler, and others, long before bacteriology was a cult. Yet notwithstanding therapeutical results have been improved by this method, it is only applicable to a very small proportion of cases. It is no wonder, therefore, that new medicaments have been continually sought after, all of which, with the exception of creosote and its derivatives, have failed to stay.

After the discovery of the tubercle bacillus, the idea of killing the same by disinfection for a time prevailed, but all efforts in this direction have hitherto ended in fiasco. It having been recognized that a *restitutio ad integrum* is only possible in the very earliest stages of tuberculosis, which generally escape diagnosis, the production of a dry cicatrix was next aimed at. Koch was largely successful in this aim, by means of exciting an artificial inflammation, but the disastrous by-effects of his tuberculin soon made it impossible for medical men to employ it as a remedy.

In 1888 Landerer repeatedly pointed out that cicatrization in tuberculosis might be brought about by aseptic inflammation, and declared cinnamic acid to be a suitable agent for inducing local inflammation by chemical means. His theory was propounded as follows: Cinnamic acid and its salts act positively chemotactic to a high degree. Two hours after intravenous injections of cinnamic-acid emulsion into rabbits an increase of white corpuscles in the blood commences, reaches its maximum in about eight hours, when they are two to two and a half times in number, and abates in twenty-four hours. Aseptic inflammation develops around the tuberculous centre, the blood-vessels becoming extended, leucocytes wandering freely, and marked serous permeation taking place. In the third week a wall of leucocytes has formed around the tuberculous centre, effectively cutting it off from the surrounding parts. (During the first fortnight, until this wall is formed, it is therefore advisable only to inject small doses, to avoid too violent inflammation at first.) Simultaneously the leucocytes commence to penetrate the necrotic tissues, followed by a growth of young vessels throughout the tuberculous centre, resolving itself into vascular tissue. The bacilli, only slightly influenced during the first few months, become difficult to detect and finally disappear completely.

The leucocytosis also occurs with subcutaneous and intramuscular injections, but to a less degree. The most important points in the cinnamic-acid treatment are, therefore: 1. Induction of general leucocytosis. 2. Aseptic inflammation of the tuberculous centre, commencing with a circumvention and permeation of the tubercles with leucocytes, subsequently with young vessels and vascular tissue.

These considerations induced me in the autumn of 1894, in default of better therapeutical remedies, to make trial of Landerer's treatment in my practice. Instead of intravenous injections, which involve a punctilious and troublesome asepsis before each injection, I determined, however, after consultation with Lederer, to make gluteal injections, as more in keeping with common practice.

Since October, 1894, I have treated twenty-two patients with cinnamic acid. The results are as follows: In six cases, or 27.25 per cent., the lesions healed completely; twelve cases, or 44.54 per cent., were improved; one patient died; and in three cases the treatment was without result. This experience, which appears favorable enough, gains in importance when the individual cases are classified according to the following types: 1. Chronic tuberculosis with no cavities discernible, but numerous bacilli and moderate evening temperature. 2. Cases with cavities without critical increase of temperature. 3. Large cavities with high, continuous fever. 4. Acute phthisis, so-called "galloping consumption."

All the cases treated belonged to groups I and II, three of the cures belonging to the first group, and three to the second. Two of the cured patients have now returned to work for two years, three others for one year, and one for five months, without any further disturbance. One of the cases, that of a colleague who has a large practice, is of special value, for he wrote me last December: "I can still confidently say that the cinnamic-acid treatment has answered with me; I hope you will have numerous successes in future."

Of the twelve cases "improved," three belonged to the first category, and nine to the second. In seven cases the improvement has been permanent, no further reports have been received of three cases, and two patients died within the year. The particulars of one of the former cases are especially interesting and instructive. The patient was severely ill and febrile; at the end of his second month's stay at Davos, when the fever generally reached 100.4° F. or more, the cinnamic-acid treatment was commenced. From this moment the temperature never rose above 99.7° F.; and in five weeks the patient was free from fever. Leaving Davos in April, he remained free from fever during the summer, and catarrhal symptoms and fever only recurred in autumn after catching a chill at home. Returning to Davos, the symptoms continued until injections were recommenced. With the injections there was soon a return to normal temperatures, and the general condition improved. One of the patients, who died subsequently, also made very rapid advances to health under the cinnamic-acid treatment. During my absence in the summer, however, when the injections were discontinued, the patient, although remaining in Davos, immediately lost ground, and high fever and acute phthisis developed, to which the patient succumbed.

As already mentioned, on account of the danger of intravenous treatment, I have preferred gluteal injection, employing the emulsion of cinnamic acid as recommended by Landerer. The injection is made into the gluteal muscles, after the locality has been thoroughly disinfected with absolute alcohol, an ordinary Overlach syringe with a thick cannula being employed. The needle, previously cleansed with absolute alcohol and one-half-per-cent. carbolic-acid solution, is pushed completely into the muscle, and the contents of the syringe are there injected, as, if the liquid is injected into the subdermal tissue, a burning pain is experienced, while the injection into the muscle is quite painless. The puncture is preferably closed with Haussmann's adhesive, and I have never observed a single abscess resulting from the cinnamic-acid injection. The simplicity of the treatment is such as should insure its prompt adoption. The development of the cure is much slower than with intravenous injections, but the final result appears to be the same, of which I have been enabled to convince myself by comparison with preparations from patients treated with intravenous injections by Professor Landerer.

As regards doses, I generally begin with the injection of a minim and a half of the five-per-cent. emulsion, and increase gradually each injection, which I make every second day, unless the patient exhibits any peculiar sensitiveness, which may render a more gradual increase advisable. The maximum dose is fifteen grains, and at this I remain until the end of the treatment, which is continued for a month after disappearance of all symptoms. Generally the gluteal injections require to be continued for five or six months, unless in exceptionally severe cases. At the conclusion of the treatment, the patients should remain under medical supervision, the sputum especially being examined from time to time. In the event of the appearance of symptoms indicating a relapse, the treatment must naturally be continued for a time.

Immediate effects from the injection do not present themselves, or a burning sensation is felt at the puncture, which at most lasts from morning until evening. The patients also generally feel depressed, and complain of being tired; in rare cases I have observed congestion of the head, and once an attack of dizziness. Nearly all the patients became irritable and nervous. After two to four weeks an improvement of the general condition and feeling is accompanied by an increase of appetite and weight. The cough is soon ameliorated, the temperature is reduced, and there is a gradual reduction of fever. With the amelioration of the cough disappearance of râles and expectorations progress hand in hand. After four or five months the râles have completely disappeared, as well as elastic vessels and bacilli in the sputum.

Proceeding in this manner, I have never witnessed evil consequences, although temporary drawbacks may occur. Especially if some of the emulsion is injected into the subdermal tissue a shooting pain is felt, sometimes extending down the whole leg, and resembling sciatica. Sometimes the skin swells painfully at the puncture, and this is accompanied by a rise of temperature, but all these symptoms disappear in a day or two without treatment. One patient, as I have already mentioned, had attacks of giddiness, and in others nervousness increased to such an extent that the treatment had to be discontinued after a few injections; but, of course, it is impossible to say how far this condition is due to suggestion. At any rate, the cinnamic-acid treatment may be safely regarded as quite innocuous.

Both physician and patient must, however, remember that the cinnamic-acid treatment, especially by gluteal injection, requires great patience until results are seen, and those who do not make up their minds from the first to carry the treatment through should abstain. In conclusion, I would say that my experience is quite in accord with Landerer's, who used intravenous injections, and I am of opinion that—1. Cinnamic acid is a drug having great influence on tuberculosis. 2. The gluteal cinnamic-acid injections, if cautiously made, are absolutely innocuous. 3. The gluteal cinnamic-acid treatment is capable of curing a considerable number of cases of pulmonary tuberculosis. 4. Cinnamic acid is not a specific against tuberculosis.

Rabies.—Mr. John P. Haines, the president of the American Society for the Prevention of Cruelty to Animals, thus concludes an article in a recent number of the society's periodical, *Our Animal Friends:*

We have said, and we repeat, that hydrophobia is one of the rarest of diseases; and that when it appears to be developed, we believe it, in the vast majority of cases, to be a simulated disease produced by a morbid imagination. We do not go so far as to assert that it is *never* caused by the bite of a rabid animal; and therefore we would advise that all proper care should be taken to destroy, without delay, all animals that are affected with rabies. Yet, here again, we must recall the fact that rabies itself is one of the rarest of all the diseases with which dogs and other animals are affected. When we hear the cry of "Mad dog!" the chances are millions to one that the dog is not mad; it is the people who are mad with terror. When we read newspaper reports of the appearance of a mad dog here or there, the chances are enormously against the truth of the story. Yet *there is such a disease as rabies;* and since there is no cure for it but death, an animal which is really rabid ought to be killed immediately.

We must remember, however, that the symptoms of rabies are not what they are generally supposed to be. An animal, for example, is not rabid because it avoids water; the rabid dog laps water eagerly. So, a dog is not mad because he froths at the mouth; when he does so it is a proof that he is not mad. The secretion from the mouth of a really rabid dog is not froth; it is a thick, ropy substance, altogether unlike froth, which the animal tries in vain to expel, at which he sometimes tears with his fore paws, and from which he often seeks relief by drinking. In view of this and other popular mistakes of the symptoms of rabies, our society has put out a leaflet, of which we subjoin a copy.

In another article Mr. Haines says:

What are the Dog Days? They are the "heated term in July and August, during which dogs are supposed to be peculiarly liable to *rabies*, or canine madness." That is one answer, but there is a better.

There are no dog days, because there is no time of the year when dogs are specially liable to rabies. There are no more cases of rabies in July and August than in December and January.

Moreover, rabies is one of the rarest of canine diseases. When you hear a cry of "Mad dog!" in the street, the chances are many thousands to one that *the dog is not mad.* When you read in the newspapers that some one has been bitten by a mad dog, the chances are thousands to one that *it is not true.*

If a human being is bitten by a mad dog, is he not doomed to die a fearful death by hydrophobia? Not at all; for hydrophobia in a human being is much more rare than rabies in a dog. Expert physicians who have given special attention to the subject are convinced that hydrophobia is never caused by the bite of a dog, and that it is simply a hysterical nervous disease caused by an unfounded dread. *Don't take that for granted;* but remember these facts: *first,* that there are more than a million of chances to one that any dog which is supposed to be mad is not mad at all; *second,* that, in all probability, any dog by which a person may happen to be bitten is not mad; and *third,* that even if a person is bitten by a dog that really is mad, the danger of hydrophobia is very slight indeed.

What is to be done if you happen to be bitten by a dog that is supposed to be rabid? The best thing you can do is just to take a few vapor baths, as hot as you can bear them. The perspiration will eliminate any poison that the bite *may* have introduced into your system. Then endeavor to forget all about it. If you follow this simple advice, the chances are incalculably great that you will be perfectly safe.

But is there such a thing as rabies, and such a thing as a mad dog? Undoubtedly there is, though I have never seen one. In the thirty years since the American Society for the Prevention of Cruelty to Animals was established, our officers and agents have been constantly on the outlook, but no undoubted case has ever fallen under their observation, or within their knowledge; and of over a hundred and sixty thousand dogs and other small animals which have been cared for at our shelter during the past three years, not one single case of rabies has been found. These facts sufficiently prove that rabies is rare in this city and in this State; but *there is such a disease,* and it is important for the public, as well as yourself, that you should know whether a sick dog is or is not rabid. If you will note the following *facts,* you will have no difficulty. You will probably find them to be quite different from the popular fancies by which most persons are misled.

1. It is supposed that a mad dog dreads water. It is not so. The mad dog is very likely to plunge his head to the eyes in water, though he can not swallow it and laps it with difficulty.

2. It is supposed that a mad dog runs about with evidences of intense excitement. It is not so. The mad dog *never runs about* in agitation; he never gallops; he is always alone, usually in a strange place, where he jogs along slowly. If he is approached by dog or man, he shows no sign of excitement, but when the dog or man is near enough, he snaps and resumes his solitary trot.

3. If a dog barks, yelps, whines, or growls, that dog is not mad. The only sound a mad dog is ever known to emit is a hoarse howl, and that but seldom. Even blows will not extort an outcry from a mad dog. Therefore, if any dog, under any circumstances, utters any other sound than that of a hoarse howl, that dog is not mad.

4. It is supposed that the mad dog froths at the mouth. It is not so. If a dog's jaws are covered or flecked with white froth, that dog is not mad. The surest of all signs that a dog is mad is a thick and ropy brown mucus clinging to his lips, which he often tries vainly to tear away with his paws or to wash away with water.

5. If your own dog is bitten by any other dog, watch him carefully. If he is infected by rabies, you will discover signs of it possibly in from six to ten days. Then he will be restless, often getting up only to lie down again, changing his position impatiently, turning from side to side, and constantly licking or

scratching some particular part of his head, limbs, or body. He will be irritable and inclined to dash at other animals, and he will sometimes snap at objects which he imagines to be near him. He will be excessively thirsty, lapping water eagerly and often. Then there will be glandular swellings about his jaws and throat, and he will vainly endeavor to rid himself of a thick, ropy, mucous discharge from his mouth and throat. If he can, he will probably stray away from home and trot slowly and mournfully along the highway or across country, meddling with neither man nor beast, unless they approach him, and then giving a single snap. The only exception to this behavior occurs in ferocious dogs which, during the earlier stage of excitement, may attack any living object in sight.

These symptoms of rabies are condensed from valuable information received from physicians of undoubted authority.

Recent Investigations on the Therapeutic Value of Syzygium Jambolanum in Diabetes.—In the experiments made by various observers, says a writer in the *Médecine moderne* (*Journal de médecine de Paris*, September 5th), the action of this plant has been shown in the most marked manner. In dogs in which the pancreas had been removed the quantity of sugar diminished notably under the influence of the liquid extract of this plant. Before the treatment the quantity of sugar was 7.27 per cent., and five days after the treatment was begun the quantity had fallen to 3.65 per cent.; furthermore, even after the complete suspension of the treatment, the quantity of sugar never returned to the former number and varied between 6.15 per cent. and 2.8 per cent.

Hildenbrandt, who sought the cause of this diminution, reached the conclusion that the *Syzygium jambolanum* diminished the formation of the sugar at the expense of the starchy substances in the gastro-intestinal canal and of the glycogen in the tissues.

Posner and Epenstein report three cases in which this treatment diminished the quantity of sugar, ameliorated the general condition, and retarded the decrease in weight.

Raimondi, Rossi, Vix, and Grasset also obtained very satisfying results with this plant. Lenné, on the contrary, obtained no favorable results; in five cases he administered a hundred and fifty grains of the powder of the fruit and never observed the least favorable action; moreover, in one case the powder had the effect of aggravating the condition of the patient, who improved as soon as the treatment was suspended. According to Levascheff, however, if Lenné had continued the treatment a sufficient length of time, he would have obtained brilliant results. A close examination of the observations of the former, says the writer, show that the sugar always had a tendency to diminish in quantity.

In criticising afterward the different arguments on which Lenné based his opinions regarding the inefficacy or the danger of this treatment, Levascheff insisted that the diminution of the appetite observed by Lenné in his patients, far from being an inconvenience, was, on the contrary, a very favorable symptom, indicating a useful therapeutic effect.

Gologanti obtained absolutely favorable results, and reached the conclusion from his experience in four cases that the *Syzygium jambolanum* must contain an active principle, not very stable, which might be, perhaps, a glycoside, the antizymotic action of which must arrest the formation of the sugar in the organism and weaken the glycolytic ferments.

If the results obtained by the European physicians, says the writer, are different from those obtained by the Indian physicians, it depends, according to Levascheff, on the one hand, upon the variety of the forms of diabetes, and, on the other hand, upon the quality and the freshness of the medicinal preparation.

The Treatment of Eczema with Picric Acid.—In an article on this subject in the *Nouveau Montpellier médicàl* for September, M. A. Brousse remarks that the kerato-plastic property of picric acid, which has been successfully used in burns, seems to indicate that its employment is proper in the treatment of eczema, certain forms of which present great analogies to superficial burns. In 1889, he says, Cérasi employed this drug in seven cases of eczema with excellent results. Dr. McLennam, of Glasgow, was also very successful in the treatment of acute eczema and eczema of the face with this drug, which he used in a saturated solution. The author himself has obtained rapid recovery in several cases in which he has employed this treatment, the histories of which are given in detail. In cases of lichenoid eczema with a thick epidermis the acid was useless, but in acute oozing eczema accompanied by œdema of the skin it was very useful. Under its influence in one case recovery was obtained in two weeks; in another case, in ten days.

Among the advantages of this treatment are the immediate relief produced by the application of the picric-acid solution and the disappearance of the pain, heat, and itching; the rapidity with which œdematous tumefaction is effaced; and the absolute painlessness of the dressing, even when it is applied to the bare surface of the derma. According to the opinion of the most competent observers, the extensive application of this drug does not give rise to any symptoms of poisoning. Not only is it useful in acute eczema, but it is also useful in the acute attacks of chronic eczema which are so frequent in arthritics, particularly if they are accompanied by oozing and ulceration of the skin; it is equally useful in the seborrhoic eczema of infancy. The author states that the results obtained by him with this treatment absolutely confirm those indicated in the publications of Dr. McLennan, M. Gaucher, and M. Leredde. M. Brousse therefore concludes that this treatment is indicated as follows: 1. In acute eczema. 2. In the acute attacks of chronic eczema, particularly if there is a tendency to oozing and ulceration of the skin. 3. In the seborrhoic eczema (impetiginous) of infancy. This treatment, he says, is contraindicated in chronic eczema and generally in all those forms of eczema which are accompanied by a thickening of the epidermis (lichenoid eczema). Nevertheless, it has the advantage, even in these cases, of allaying the itching.

The Aqueous Extract of Suprarenal Capsules in Ophthalmology.—In the *Gazette hebdomadaire de médecine et de chirurgie* for September 19th, M. Maurange refers to M. Barraud's method of employing these capsules in ophthalmology. Sheep capsules are used, and with the product of evaporation a solution is prepared with equal quantities of sterilized water; this is done, as much as possible, at the time of using, for the solution becomes altered very quickly.

One drop of this suprarenal solution instilled into the eye produces at the end of thirty or forty seconds an energetic vaso-constriction of the conjunctiva. After a few minutes this condition becomes complete and is sometimes sufficiently intense to cause a livid pallor of the mucous membranes. This symptom persists for from fifteen to twenty minutes; afterward the blood-vessels regain their former appearance without presenting compensatory vaso-dilatation.

This astringent property, says the writer, is particularly remarkable when the conjunctiva is inflamed; in a few minutes the pain and redness completely disappear and the eye appears to be healthy. Unfortunately this action is transitory. Instillation is not painful and renders anæsthesia with cocaine possible, even when the congestion of the eye restricts the effects of this alkaloid. On the whole, says the writer, the aqueous extract of these capsules finds its application as follows: 1. In conjunctivitis, kerato-conjunctivitis, vascular keratitis, episcleritis, and glaucoma as an aid to the usual medication. 2. In cases in which extreme inflammation of the tissues and intense congestion of the media of the eye limit the action of cocaine, it regains its analgetic power, owing to the ischæmia previously produced by the suprarenal extract. 3. Finally, whenever there is reason tô fear a hæmorrhage during surgical intervention on the eye, the extract acts either as a preventive or as a radical hæmostatic agent.

The Clamp Treatment of the Umbilical Cord.—In the *Presse médicale* for September 8th there is an article on this subject in which the writer states that the treatment practised in M. Bar's service is very simple and very sure, and it should be tried by practitioners. It consists essentially in replacing the thread of the old ligature by a hæmostatic forceps.

The forceps is applied as soon as pulsation is no longer felt in the funicular stem, that is, after the fœto-placental circulation is arrested, which, as is known, is a gain of nearly three ounces of blood to the child, for that quantity it would have been deprived of by an immediate ligature.

The forceps is placed vertically to the axis of the cord, close to the umbilicus, in order to leave under the instrument only a very small part of the cord; this is an essential condition in order to obtain rapid desiccation. The handles of the forceps are applied afterward on the abdomen, and the cord is cut as near as possible to the forceps. After hæmostasis is obtained, a dressing of sterilized absorbent cotton is applied entirely around the forceps in order to separate it completely from the abdominal wall; a rather long compress surrounds the whole, and the child is then dressed.

The forceps is removed at the end of twenty-four hours, and the segment of the cord will be found to have undergone very important modifications. Flattened transversely, it has become thin, laminated, transparent, and like parchment, and on its two surfaces will be seen the impression of the grooves of the forceps. This horny layer is removed with a pair of scissors close to the skin, and an antiseptic gauze dressing finishes the operation. Occasionally a drop of a reddish serosity which still fills the umbilical vein is seen after section, and sometimes blood stains the dressing after the laminated segment is cut, but it is limited there.

After the horny layer has been cut there remains in the umbilical cicatrix a small stump which is often dry; this falls of itself on the fourteenth or fifteenth day after birth, leaving in a large number of cases a small reddish ulceration which is easily seen by separating the lips of the umbilical depression. This easily becomes infected if care is not taken to continue the antiseptic dressings until cicatrization is complete. The dressings are frequently soiled by urine and fæcal matters, and should be renewed twice a day at least. Until cicatrization is complete, the child should not be bathed.

The Treatment of Tuberculosis and other Infections with the Oxytoxines.—In the *Journal des Praticiens* for September 18th a writer calls attention to Dr. Hirschfelder's statement (*Deutsche medicinische Wochenschrift*) that tuberculosis is cured by the formation of an antitoxine. This antitoxine, he says, is no other than oxidized tuberculin. If tuberculous peritonitis is cured after laparotomy, which allows of the access of air to the peritonæum, it is due to the oxidation of the tuberculin which is found there and to its transformation into antitoxic oxytuberculin; it is this, then, that cures local and general tuberculosis.

Dr. Hirschfelder, says the writer, has tried to realize this oxidation outside of the organism, and he prepared a tuberculin in a different way from that of Koch, with cultures of a very virulent bacillus. After sterilizing the bouillon for an hour, and filtering it, he mixed the filtered preparation with an eighth of sterilized and oxygenated water at ten degrees. Every twelve hours he added the same proportion of oxygenated water, and after ninety-six hours there remained an excess of the oxygenated water. This liquid is not toxic, provided all the tuberculin is oxidized, and, in order to be assured of it, it is best to experiment at first on animals. Phthisis is not the result of a pure tuberculous infection, but of a mixed infection.

The expectorations of phthisical patients were then sown and the cultures treated in the same way as those of Koch's bacilli. This liquid is called oxysepsin. According to Dr. Hirschfelder, considerable quantities of this substance, representing as much as thirty-eight grains of tuberculin, may be injected and no inconveniences will result, and there is no local pain or fever. The amelioration of the general condition is astonishing, especially after the combined injection of oxytuberculin and oxysepsin. The writer is of the opinion that this treatment should be successful also in neumonia, streptococcic infections, and empyema.

Kind Words for the Medical Profession.—A writer who signs his articles Patroni contributes the following to the Louisville *Courier-Journal* for October 6th: Speaking of doctors, I wonder whether these medical men from every section of the country between the mountains of the East and West who are gathered in Louisville this week understand how often they are condemned bitterly and without reason. They are called quacks and humbugs and avaricious self-seekers. They befool weak women. They feel pulses, look wise, prescribe bread pills or colored water, and charge outrageously for the same. You have heard that sort of talk, of course. We all have. But somehow I have noticed that it comes usually from the robustious individual who boasts that he has never had a day's sickness in his life and regards visits to physicians and to church as kindred marks of effeminate weakness. And somehow I have also noticed that these same individuals are prone to surrender quickly to slight illness; to whine and whimper at physical pain that is not a tithe of that borne uncomplainingly day by day by thousands of fragile women, and that they become ready subjects for deathbed repentance as soon as a fever or other ailment begins to sap their strength. And when I hear men of this type delivering their little philippics against the doctors I am reminded always of one or two of those unreported happenings that come within the observation of every newspaper man.

It was in a florist's shop not long ago that I chanced to meet a certain Louisville doctor. As I entered the place the clerk was saying:

"The usual roses, doctor?"

"Yes, and a few variegated carnations. She saw some of them the other day for the first time, and said she liked the 'speckled pinks.'"

Our greetings followed, and then, as this doctor is young and gifted with good looks, as well as a voice and manner that both men and women like, I tried a weak jest at his expense:

"The 'usual' roses, doctor?" I said. "Sounds a little suspicious, doesn't it?"

He laughed. "Yes, that's right. I get them every day. They're for a girl, too, and I'm very fond of her. If you've nothing better to do, take a drive with me, and we'll have a chat before I leave the flowers."

I had nothing better to do than to have this chat with one of the brightest and most companionable men of my acquaintance, and half an hour later we entered an infirmary in the southern part of the city. Entering one of the private rooms, we saw a child, a girl of ten or twelve years, tossing restlessly from side to side. She was a pretty child, but the brightness of the blue eyes beneath the heavy lashes and the crimson spot in each wasted cheek told of consuming fever. She saw but one of us as we entered the room. In fact, throughout our stay I stood at the foot of the bed silent and unseen. I was content to watch the smile that parted the parched lips and the child's look of supreme content that lightened her face as she saw my companion.

"You weren't here yesterday, doctor," she said. "The flowers came, but you didn't. Were you very busy?"

"Yes, very busy, little one. But I brought the flowers myself to-day," and he opened the parcel.

"Oh! and you've brought me some speckled pinks, too," was the child's cry, and after one delighted sniff the poor, thin arms reached around the doctor's neck. I think at that moment he was thinking of another little girl; a little girl at his own home, to whom speckled pinks and all the other good things of life were commonplace; a little girl that he was watching with daily, jealous care to rear in health and beauty. I know only that the moments stretched into the quarter hour and then the half while the fashionable physician sat in quiet converse with the child. Profitable practice was waiting for him as the thin little voice broke into hoarse laughter at his stories, but he did not think of other patients until the too-bright eyes grew drowsy. We left her sleeping, with her posy clasped tightly to her pain-racked chest, and for a while our drive was a silent one.

"What is the trouble with her?" I asked finally.

"Consumption," he said. "She can live only a few weeks longer. She seemed to take a fancy to me when she first saw me, and I am trying to keep her comfortable. It's all we can do, in spite of all our study."

The child may be dead now. I do not know. She was one of a big family, and her parents are poor, hard-working Germans in the East End. Her expense for the room and nursing and dainty food at the infirmary were paid from the fashionable physician's private purse. He can afford it. He sends in big bills, I understand, to the rich men of the city. He happened to like the look that came into the child's face whenever she saw him and he paid for his fancy. That was all. Some people call him a humbug, I suppose. Perhaps he is.

There is another true story, but this happened years ago, and I tell it as it was told to me. I can mention names, too, in this case, for the doctor was that splendid surgeon and kindly gentleman, David Yandell, and he is no longer in the active ranks of the profession he graced so long.

"It was a bitter night in winter," said my informant, "and we had a pleasant party at the Pendennis Club. Dr. Yandell was already an old man, who rarely paid night visits, and when a call came for him from the home of one of Louisville's wealthiest men he promptly summoned his assistant and sent word that the inclemency of the weather would prevent his personal attendance. The case was not a serious one and could well wait his visit the next morning. The same was true of the next call, but his answer was different. It was from a cottage far down town and the request that came over the telephone was a woman's, asking that the doctor tell her how to make her husband more comfortable through the night. It was from a family that had once been prosperous. But that had been years before. Ill-luck and ill-health had long since reduced them to dire straits, and former friends had fallen away with their fortune. But the answer of one old friend was:

"'Don't be alarmed, my dear. As soon as I can drive down I will be with you.'

"The first call had been from a home not half a dozen squares away, where large fees were certain. The second was from a penniless family, and a closed carriage was needed for the five-mile drive in the snow."

These are but two stories that I know to be true. I could tell twenty like them. The practice of medicine being a human occupation, the men who practise it naturally have their foibles and their failings. There were quacks before Le Sage and Molière were born, and there will be such until the end of time. The wrangles of the schools and the petty professional jealousies seem trivial and often ludicrous to the laymen. But, my censorious friend, when you feel moved to denounce doctors as a class, do not do so in the presence of a newspaper man of ten years' experience in work that takes him behind the scenes of the sin and suffering of life. For he will not hear you patiently.

The New York State Medical Association.—The fourteenth annual meeting was held on Tuesday, Wednesday, and Thursday, October 12th, 13th, and 14th, in New York. Besides the president's address, the programme included the following papers: Acute Catarrh of the Middle Ear as a Sequel of La Grippe, by Dr. Samuel W. Smith, of New York County; Medical Expert Testimony, by Dr. Homer O. Jewett, of Cortlandt County; What shall we do to be Saved? by Dr. T. J. Hillis, of New York County; Brief Comments on the Materia Medica, Pharmacy, and Therapeutics of the Year ending October 1, 1897, by Dr. E. H. Squibb, of Kings County; Studies in Typhoid Fever, by Dr. Henry C. Buswell, of Erie County; Further Notes upon the Operative Treatment for Infantile Paralysis, by Dr. S. E. Milliken, of New York County; An Aid Corps to the Medical Profession, by Dr. F. E. Stewart, of New York County; The Abuse of Medical Charity, by Dr. F. H. Wiggin, of New York County; The Status of Medicine, by Dr. Nelson L. North, of Kings County; The Growth of Commercialism in Medicine, by Dr. John Shrady, of New York County; A Curious Condition of the Appendix Vermiformis as found at Operation, by Dr. E. D. Ferguson, of Rensselaer County; Stricture of the Rectum, by Dr. W. S. McLaren, of Litchfield, Connecticut; A Report of Some Unusual Cases of Appendicitis, by Dr. Joseph D. Bryant of New York County; A Case of Otitic Brain Abscess from Chronic Otorrhœa; Opening of Mastoid and Skull; Recovery, by Dr. Frank S. Milbury, of Kings County; The Surgery of Tuberculosis of the Peritonæum, by Dr. Parker Syms, of New York County; Traumatic Paralysis of the Upper Extremities, by Dr. John F. Erdmann, of New York County; A New Intraocular Iris Scissors, by Dr. H. W. Wandless, of Dallas, Texas; General Considerations concerning Auto-intoxication, by Dr. H. A. Haubold, of New York County; Tetanus, by Dr. Frederick S. Dennis, of New York County; Symptoms noted during the Interparoxysmal Stage of Hysteria, by Dr. William D. Granger, of Westchester County; A Study of Alcohol, Tobacco, Tea, and Coffee, and their Effects in Nervous Disorders, by Dr. Charles E. Lockwood, of New York County; Massage as an Occupation for the Blind, by Dr. Arthur Y. Bennett, of Erie County; The Effects of Poisoning, by Dr. Morris W. Townsend, of Genesee County; Tuberculosis of the Tonsil, by Dr. Seymour Oppenheimer, of New York County; A Case of Elephantiasis of the Vulva, with a Specimen, by Dr. William P. Finder, Jr., of Rensselaer County; The New Epoch in the Study of Neural Pathology, by Dr. W. A. Van Gieson, of New York County; The Conservative Surgical Treatment of Fibromyoma, by Dr. E. E. Montgomery, of Philadelphia; Some Remarks on Ovarian Surgery, by Dr. A. Palmer Dudley, of New York County; The Diagnosis and Management of Labor in Occipito-posterior Positions, by Dr. Charles H. Glidden, of Herkimer County; Pyothorax in Children, by Dr. Douglas Ayres, of Montgomery County; Faradaism in the Treatment of Inertia of the Uterus, by Dr. William H. Robb, of Montgomery County; Improvements in the Technique of Perinæorrhaphy, by Dr. Martin Cavana, of Madison County; Asepsis and Antisepsis in Obstetrics from the Standpoint of Present Scientific Knowledge, by Dr. George Tucker Harrison, of New York County; For what Reasons should the Uterus be removed in Pelvic Surgery? by Dr. C. C. Frederick, of Erie County; and The Differential Diagnosis of Pelvic Cellulitis and Peritonitis, by Dr. Ely Van de Warker, of Onondaga County.

The General Treatment of Polyneuritis.—According to a writer in the *Journal des praticiens* for September 11th, the therapeutic indications are as follows:

1. To combat the painful manifestations: Morphine in subcutaneous injections; antipyrine, sodium salicylate, even in cases in which rheumatism is not manifested; salophene in amounts of from sixty to ninety grains a day, in capsules containing fifteen grains; methylene blue, because of its elective affinity for the medulla of the nervous fibres; carbolic acid in lotions on the painful parts, also in compresses saturated in a four or five-per-cent. solution. Subcutaneous injections of carbolic acid and morphine combined near the superficial nerves have been recommended. A two-per-cent. solution of the carbolic acid is combined with a one-per-cent. solution of the morphine, and the amount to be injected at a time is a cubic centimetre. These injections are more particularly indicated in infectious polyneuritis. Hydrotherapy, especially at the acute period, may be useful according to Pospischil's procedure.

2. For insomnia the association of potassium bromide and morphine is an excellent thing; but when symptoms such as cardiac tachycardia, etc., are observed, showing the invasion of the vagus nerve, morphine is contraindicated, and it is preferable to employ chloralose, sulphonal, or trional; paraldehyde is a soporific of choice, especially in alcoholic neuritis; chloral should be prescribed carefully and in moderation because of its depressing action on the heart.

3. In paralysis of the cranio-bulbar nerves prompt and energetic action is demanded, and here the treatment consists in subcutaneous injections of caffeine, ether, or camphor; faradic excitation of the vagus nerve at the neck is also to be employed. Regarding the ether injections, it must be borne in mind, says the writer, that they may cause a traumatic neuritis when they are practised near a superficial nervous trunk. When the extension of paralysis to the organs of respiration is marked by grave symptoms of dyspnœa and cyanosis the following means may be employed: Mustard plasters, thrashing the body with cold linen cloths, deep and superficial faradization, inhalations of oxygen, and subcutaneous injections of strychnine in order to stimulate the bulbar centres.

4. In case of deformities following defective attitudes and tendinous retractions, gutters intended to restore the segments of the limbers to a physiological attitude should be employed.

5. The curative treatment consists in the anatomical and functional restoration of the altered muscles and nerves. If the organism itself is the principal contributor to the anatomical regeneration, it must be assisted by a good and strengthening diet and by medicaments rich in phosphorus. In order to hasten the nutrition of the nerves and the muscles, galvanization of the medulla, plain hot baths, salt baths, and subcutaneous injections of strychnine, not exceeding a milligramme at a time, should be resorted to. Functional restoration consists in arousing contractility of the muscles where it is almost destroyed, in effecting a sort of "re-education" of the muscles by varied exercises, and by progressive movements of the fingers, the hands, or the feet. After the patients are able to walk the general condition must not be neglected; they should remain in the open air, and franklinization and general faradization should be carefully applied; when the patients are convalescent hydrotherapy is indicated.

6. Deformities of the limbs after recovery from polyneuritis, which are due to muscular atrophy and to tendinous retraction, often induce veritable deformities and great functional uneasiness in the limbs. In this case surgery is employed and the tendons are cut.

These are, says the writer, according to Professor Raymond, the principal therapeutic indications and medications which should be employed in the treatment of a disease which has become frequent and is better known owing to recent and numerous works on the subject.

Lectures and Addresses.

PROGRESS AND PROBLEMS OF MEDICINE TO-DAY.*

By JOHN V. SHOEMAKER, M. D., LL. D.,
PHILADELPHIA.

Mr. President and Members of the Mississippi Valley Medical Association: I highly appreciate the honor which you have conferred upon me by your invitation to deliver an address before this distinguished body. The Mississippi Valley Medical Association, composed of representatives from many States, brings together every year many of the most active workers and scientific minds of the profession. To be called upon to address such a meeting is a dignity of which one may well feel proud. Embracing so large a portion of our country, your association is formed upon the broadest principles and has ever been an admirable exponent of American medicine. The city in which we meet is the home of culture and hospitality. Amid such favorable surroundings we may confidently expect that our meeting shall be crowned with eminent success.

I shall speak to-day of some of the noteworthy advances which have been made, and of some of the medical problems which occupy our minds at the present time.

Organotherapy and Serum Therapy.—The principles of organotherapy, serum therapy, and antitoxine therapy have been often misunderstood or willfully opposed. They are, nevertheless, the result of modern scientific inquiries into the nature and cause of disease and the study of natural methods of cure.

The doctrine enunciated by Brown-Séquard that the ductless glands furnish directly to the blood has proved very suggestive. The conception has been particularly elaborated and demonstrated in the case of the thyreoid gland. We are not yet thoroughly acquainted with the offices of that organ, but we have learned that its "internal secretion" has much to do with maintaining the normal composition of the blood and ministering to general nutrition. It has been shown, both clinically and experimentally, that when the functions of the thyreoid gland are abolished a peculiar train of bodily and mental ills, known as myxœdema and cretinism, arise. By a series of experiments it has been conclusively shown that the introduction of the gland, or an extract prepared from it, will relieve and approximately cure the distressing manifestations due to suppression of the functions of the gland. When a degree of decided amelioration has been reached it has also been found that small and occasional doses will suffice to render the improvement permanent. The efforts which have been made by several physiological chemists to isolate the active principles of the thyreoid gland have not yet met with complete success, but the discovery of thyreoidin by Baumann gives us hope that we may eventually be able to administer the essential ingredient of the gland with the same accuracy as we give the alkaloids of opium, nux vomica, or cinchona.

No system of medication can rest upon a more rational foundation than the supply to the organism of lost and needed components. The brilliant success of thyreoid feeding in appropriate cases prompted the thought that the same method might be advantageously followed in disease of other ductless glands.

Addison's disease is almost as distinctly associated with lesion of the suprarenal glands as myxœdema with alteration of the thyreoid. From the observations of Schaefer and Oliver it appears probable that the adrenals furnish an internal secretion which plays an important part in the nutrition of the skin and muscular tissue. The effort has been made to favorably influence the progress of Addison's disease by the administration of an extract of the suprarenal bodies. The cases in which this method has been followed are yet too few to enable us to form a definite conclusion as to its value. Some cases have been improved. Others have been unmodified or even aggravated. It must be remembered that the lesion of the adrenals in Addison's disease is generally of a tuberculous character, and therefore the conditions are less favorable than in other maladies. The results thus far obtained, however, warrant further attempts in the same direction. The same may be said of the use of the pituitary body in acromegaly and bone marrow in the graver forms of anæmia. The antitoxine treatment of diphtheria has undoubtedly had a marked effect in reducing the mortality of that dangerous disease and, fortunately for humanity, has greatly lessened the frequency and severity of the laryngeal localization. Pathogenic bacteria produce both toxines and antitoxines. Therefore, the employment of blood serum, which is itself possessed of bactericidal properties, holding in solution specific antitoxines, is a legitimate method of experimental practice. It is highly probable that the progress of science will furnish us with effective serums and antitoxines for the cure of other infectious disorders. In streptococcus infection, cholera, the plague, tetanus, yellow fever, and tuberculosis, strong efforts have been made, with varying success, to discover methods by which we should be able to bring these maladies under control. The new tuberculin of Professor Koch has not yet been sufficiently tried to warrant the expression of a positive opinion regarding its merits. One of your own number, Dr. Paul Paquin, of St. Louis, has for several years been using with encouraging results an antitubercle serum of his own preparation. Carrasquilas, of Bogota, has lately essayed to treat leprosy with an antidotal serum, with what success remains to be seen.

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* Delivered at the twenty-third annual meeting of the Mississippi Valley Medical Association, Louisville, Ky., October 6, 1897.

Widal's Serum Diagnosis in Typhoid Fever.—A method which enables us almost infallibly to recognize typhoid fever during the first week must be looked upon as an exceedingly valuable addition to our diagnostic resources. Widal's method is the outcome of a series of important studies upon the bactericidal properties of the blood and the origin of immunity. It has been shown that the blood of an infectious disease, even when largely diluted with water, causes loss of motility, together with clumping or agglutination of the specific bacteria which gave rise to the disease.

The infected serum clarifies within a number of hours a turbid culture fluid of typhoid bacilli or, if the test be applied under the microscope, the reaction is observed within a few minutes. The test may also be performed by means of dried blood.

Within the last year this test has been utilized in a large number of cases and has almost invariably proved successful. When the reaction occurs it constitutes a direct demonstration of the nature of the disease.

The principle involved in Widal's serum diagnosis is of general application, and there is reason to believe that it will in the future be extended to other diseases than typhoid fever.

Yellow-fever Bacillus.—Recent bacteriological discovery relates to the bacillus of yellow fever. Almost simultaneously Sanarelli and Havelberg announced that they had found characteristic bacteria in the blood and tissues of patients suffering from that disease, but as the organisms differ as regards habitat and reactions it is obvious that one or the other observer must be at fault. Surgeon-General Sternberg is inclined to believe that the *Bacillus icteroides* of Sanarelli is identical with the organism studied by himself in Havana in 1889 under the provisional title of "bacillus X." Time and repeated experiments only can decide these conflicting points.

Röntgen Rays.—The discovery of the X rays has placed at our command a valuable method of detecting lesions of bony tissue and of locating with accuracy certain kinds of foreign bodies. It has also been ascertained that vesical and biliary calculi are impermeable to the rays. Skiagraphy has hitherto been of more assistance to the surgeon than to the physician. To the latter, however, it has revealed facts of interest regarding the osseous lesions of rheumatism, gout, and rheumatic gout. It has also enabled us to detect the changes of arteriosclerosis, and will probably become useful in the diagnosis of aneurysm and pulmonary disease. Experiments seem to indicate, moreover, that its field of usefulness will be further extended.

Cancer.—The most difficult problems of medicine relate to the cause and treatment of cancer. Why does this disease arise? Why is it so destructive? Why are migrant epithelial cells so deadly? These questions, to every one of scientific and practical interest, appeal to me to-day more forcibly than ever, since I came here almost immediately from the deathbed of her who gave me birth. What anguish can be more acute than to watch the painful progress of such a malady in the persons of those who are nearest and dearest! The anguish of approaching loss, the misery of seeing intense suffering, is surely increased by our feeling of powerlessness.

Cohnheim's theory of the origin of carcinoma is very suggestive, but it is, after all, only a theory, and as yet unsupported by decisive evidence. We have strong reasons for our present belief that carcinoma in the early stage is a strictly local disease. If this opinion be well founded—and I believe that it is—it is of the utmost importance that the neoplasm should be totally eradicated during this stage. This can be accomplished by various surgical procedures. I am well aware of the improved statistics of early operations. I am cognizant of many cases, in my own practice and in that of others, especially as regards superficial epithelioma and mammary carcinoma, in which many years passed after operation without any sign of recurrence. On the other hand, the statistics of Dr. Williams have shown that, at least in England, the disease is on the increase.

When we know more of the real origin of carcinoma we shall probably be on the way to securing a method having power to arrest the morbid development of this malignant neoplasm. So high a surgical authority as the late lamented Professor D. Hayes Agnew declared to me, upon one occasion, that could he live his life again he should wish to devote his powers to the study of the means by which the progress of cancer might be arrested without recourse to the knife. We now possess caustics, the knife, and electricity. None of these has satisfactorily solved the problem. Our urgent desideratum is a method capable of arresting malignant growth and causing its retrogression or expulsion.

A great difficulty with which we have to contend is that, in visceral carcinoma, the first stage is unrecognized. The symptoms may not be sufficiently severe to compel the patient to seek advice, and at our first examination we find it is already too late to hope for success from surgical intervention. Auto-intoxication may have already taken place and radical extirpation is impossible. Moreover, the disease may be in an inaccessible situation.

A careful study of many cases leads me to believe that habitual and prolonged irritation is a fruitful cause of cancer. The irritation may be mechanical or chemical; it may be due to ordinary causes, or, possibly, to the activity of a micro-organism. There is much in the history of cancer to suggest an infectious process. The local origin and systemic contamination present this analogy. The interesting studies of Darier and others relative to sporozoa as a source of cancer have been far from commanding universal assent and, in fact, his conclusions seem to be losing rather than gaining favor. The researches of Fiessinger relative to the conditions associated with the spread of cancer are likewise very suggestive, but throw no light upon the immediate cause of the disease.

Two or three of the most recent attempts to check the growth and counteract the effects of cancer may here be briefly noticed. Serum therapy has been tried by several observers. Professor Richet, in conjunction with Hericourt, has studied the question from this point of view. These collaborators have prepared a serum antidote, but experience is as yet too limited to justify the expression of any opinion concerning its value.

The use of erysipelas toxines is, to say the least, of doubtful efficacy. Although some favorable results have been reported, many surgeons have witnessed failure. The procedure is not without immediate danger to life, and it is apt also to increase rather than reduce the activity of the malignant disease.

Celandine, the remedy brought forward by Denissenko, has in my hands proved inefficient. It exerted a local caustic action, but I saw none of that destruction *en masse* of neoplastic tissue of which some distinguished observers have written. It is a great disappointment to me that my results have not been more encouraging, but I shall repeat my experiments in another series of cases. At the present time I must say that, in similar cases, I have witnessed better effects from the topical use of jequirity.

Other substances which have been used are methyl violet (or pyoctanin) and methylene blue. Although some power has been claimed for both of these products, their efficacy has not been so conspicuous as to cause their general adoption in practice.

Malaria.—The study and management of fever forms a large part of the work of the general practitioner. In many parts of this and other countries malarial fevers and their consequences necessarily claim special attention. The bold outlines of malarial attacks form a very decided picture. The sudden onset, the marked chill, the high temperature, the sweating, the periodical recurrence, differ so widely from the symptoms of continued fever—notably typhoid—that the veriest neophyte recognizes that he has to deal with a disease of special type. The symptoms and temperature record usually free us from embarrassment in the diagnosis of an acute paroxysm.

A no less characteristic feature of malaria, and one which is in curious contrast with the abrupt attack, is the long continuance—not to say permanence—of its influence upon the blood. The manifold variety of manifestations springing from chronic malarial intoxication may often puzzle the most zealous student. The picture, at first so plain, has become blurred and obscure.

The most active concomitants in producing malaria had long been recognized, but it was only within the last few years, primarily from the labors of Laveran, that we have learned its specific cause. Our knowledge of the malarial parasite, however, is very imperfect. We can obtain it from the blood of patients, but we know little or nothing of its life history outside the human organism. Here is a broad field for research which might well be cultivated by the biologists of the Mississippi Valley. Sir Patrick Manson advances the idea, supported by some clinical data, that the mosquito has much to do with the transmission of the parasite. This insect is usually abundant in malarial districts. The influence of infected water in originating attacks of malaria has also recently been demonstrated in a number of clinical histories which have been published. The beneficial effect of sterilizing such water is shown by cessation of the epidemic. It is believed that the parasite may be communicated either through the air or water.

I need not remind this audience that chronic malarial infection is a potent agency in the genesis of various affections. You see the proof in your everyday work. Anæmia, cardiac excitability, neuralgia, neuroses, and organic affections of different kinds are often traceable to this source. Cardiac disease is sometimes observed in acute malaria. Although Laveran denies a causal connection between periodic fever and disease of the heart, Duroziez and Lancereaux have witnessed valvular disease dependent upon paludal influence, and Ranzier detected cardiac involvement in seventeen out of fifty-seven cases of intermittent fever. The last-named writer states that an apex murmur due to functional insufficiency of the mitral valve is not uncommonly present. Lancereaux also believes that malarial intoxication may give rise to aortitis, accompanied by neuritis of the cardiac plexus and manifested by especially painful angina.

A form of pulmonary disease associated with malaria has been described by De Brun under the title of "pneumopaludism of the apices." The physical signs indicate consolidation. Râles and tubercle bacilli are absent. There may or may not be cough and expectoration.

Dr. Bagot has recently reported two cases of soft cataract and one case of retinal hæmorrhage following severe attacks of malaria. Among the changes met with in the eye as the result of malaria are optic neuritis, peripapillary œdema, extravasation of leucocytes, plugging of retinal and chorioidal vessels by pigmented leucocytes, and consequent multiple hæmorrhage in the fundus.

The late Dr. Lunsford P. Yandell, of Louisville, was wont to attribute many skin diseases to a malarial influence, and directed his treatment in accordance with that belief.

A very interesting clinical lecture published by Dr.

J. M. Da Costa describes a case in which there was an undoubted coexistence of typhoid and malarial fever, as actually proved by microscopical blood examinations. But four such cases are upon record. Nevertheless, the possibility of mixed infection is demonstrated.

The opinion that malarial disease is decreasing in frequency of occurrence has been verified, at least for Philadelphia, by Dr. J. M. Anders. As the result of an analysis of five thousand and forty cases, gathered from the records of most of the leading hospitals of Philadelphia, he has found a steady and at times rapid decline in the number of cases during the last half century, and more especially during the last twenty-five years. To this general rule exceptions may occur from the fact that plasmodial development is influenced by certain external conditions, as the degree of humidity of the soil, upturning or removal of the surface of virgin soil, temperature, presence or absence of oxygen, etc.

The basis of the medicinal treatment, particularly in acute cases, is quinine. That drug possesses a more decided antiperiodic power than any other which we possess. Nevertheless, it does not always cure the disease and we must beware of falling into a routine use of the remedy. In chronic cases, above all, I believe that much is to be gained by a judicious regulation of the diet in association with a strict observance of hygienic principles.

Among drugs are several which may be effectively used in place of quinine in cases where that alkaloid has not proved successful. One of these is phenocoll hydrochloride, given in daily doses of fifteen grains to children and twenty-four grains to adults. It will usually reduce the fever and prevent recurrence without itself producing any unpleasant by-effects. Phenocoll is thought to possess an advantage in cases complicated with pregnancy as, unlike quinine, it has no stimulant action upon the uterus.

In the experience of Dr. Peter Buro, who practises in a malarial district, potassium nitrate and sodium nitrate are efficient remedies in malarial intermittent of any type. The sodium is better adapted than the potassium salt to hypodermic use. The ordinary single dose for adults is from fifteen to twenty-four grains, and they may be given in either the febrile or afebrile stage, although larger or more frequently repeated doses are often required. The salts are said to be well borne.

Methylene blue, for theoretical reasons, was recommended and has been used to some extent in acute malaria. It seems, however, to be an uncertain remedy, as conflicting results are reported by different writers.

Pambotano is another drug which has been introduced as an antiperiodic. It is given in doses of one to two drachms and appears, indeed, to possess considerable virtue.

It is difficult to eradicate permanently the poison of malaria or its consequences from the system. In those who have been saturated with malaria manifestations of the disease recur at times for many years. It is undoubtedly a prolific source of bodily ills. I do not, however, find any evidence to warrant the assumption that this toxæmia exerts a profound and deleterious influence upon the cerebral functions. Literature and science flourish within the malarial belt as well as in other regions.

Eleven years ago, in an English city and at a meeting of British physicians, I listened with shame and indignation to an American belittling his own country. Various alleged shortcomings were exposed, and the evil influence of malaria upon intellectual ability and achievements was depicted. A map, shaded to represent the prevalence and fatality of malaria, was exhibited, and the astounding statement was made that malarial intoxication was incompatible with scientific acquirements. I looked upon the map, and behold! the greater part of the United States was under a portentous shadow. To the north and east and in the northwest the gloom was lightened in a comparatively small area, but the great Mississippi Valley was shaded in darkest hue. Almost the entire South, in fact, was included in the same condemnation, for the dark shade ran down along the Atlantic seaboard. It is true, acknowledged the speaker, that within the malarial districts McDowell, Sims, Gross, and Campbell lived and labored, but these men, only four in number—were exceptions, and "exceptions prove the rule!"

Only four in number! Alas, my country! Who that is conversant with the history of this nation can not call to mind scores of men, natives or residents of the Mississippi Valley, who were conspicuous in the higher departments of human activity? Orators, statesmen, engineers, soldiers, sailors, jurists, physicians, and divines of the first rank have adorned this section and won international fame. How few American statesmen have been more widely beloved than Henry Clay, of Kentucky! Where shall we find a higher type of resolute American manhood than in the hero of New Orleans and President of the United States, Andrew Jackson, "Old Hickory"? Was not the great "Father of his Country" born on the malarial banks of the Potomac? To whom are we chiefly indebted for the great State of Texas but Sam Houston, the fearless man of genius? On the banks of the Mississippi lived the celebrated Thomas H. Benton, who so long represented his adopted State in the Senate of the United States. The founder of ovariotomy, the courageous and modest man who inaugurated a new epoch, dwelt in this State. Professor Samuel D. Gross, the "Nestor of American surgery," as he was called, spent the most prolific part of his life in this city, and among his writings is a history of the many eminent men of Kentucky. John C. Calhoun, one of the keenest intellects which this country has produced, was reared within the malarial belt. Abraham Lincoln was a native of the Mississippi Valley, and from a more southern part of the same region came the President of the Confederacy, Jefferson Davis. President James K. Polk belonged to Tennessee, while Ohio, included within the country tributary to the Mississippi, has given the country Garfield, Hayes, and McKinley. General William Harrison, the president of a month, was a native of Virginia, but his laurels were gained in the West, while his grandson, Benjamin Harrison, has been a lifelong resident of this great valley. That wonderfully brilliant man, the late Judah P. Benjamin, of New Orleans, after a conspicuous career in his native land, became the ornament of the English bar.

The roll of distinguished physicians who have labored within the malarial territory is a long one and is deeply engraved on your memories. I have referred to the few "exceptions which prove the rule." My time is all too short, but you will pardon me, I know, if I lay a tribute upon the tombs of a few of the giants of our profession: Daniel Drake, the founder of medical schools and the erudite historian of the diseases of the Mississippi Valley; John T. Hodgen, the great surgeon of St. Louis; Robert Battey, of normal ovariotomy fame; Crawford W. Long, of Georgia, the first to use ether as an anæsthetic, and that illustrious trio of New Orleans, Professor Richardson, Samuel M. Bemiss, and Joseph Jones.

A long list of Southern men—many from this valley—has been called to chairs in Northern and Eastern colleges. I can only mention a few: Samuel D. Gross, from Louisville (although a Pennsylvanian by birth), to Jefferson; Samuel Dickson, of Charleston, South Carolina; and Thomas K. Mütter, of Virginia, to Jefferson; Professor Polk, of Tennessee, and Professor Wyeth, of Virginia, to New York; Professor Holland, from Louisville, to Philadelphia; Professor Wormley, from Ohio, to the University of Pennsylvania; and two surgeons from the South to the college with which I have the honor to be connected—the Medico-chirurgical of Philadelphia—Ernest Leplace, from New Orleans, and your own townsman, William L. Rodman, who have honored their profession, as well as themselves, by their original work in surgery. Joseph Price, the eminent gynæcological surgeon, came to Philadelphia from Virginia. Did time permit I could extend this list indefinitely.

Finally, as connected with the subject, I may remind you that the great Protector, Oliver Cromwell, was born and bred in the malarial fen district of England, and died of malarial fever.

In reference to the asserted pernicious effect of malaria upon the mind, I am tempted to paraphrase the exclamation of Madame Roland and say, "O Science, how much folly may be uttered in thy name!"

Original Communications.

A NEW FORM OF OPERATION FOR THE CURE OF INGUINAL HERNIA.

[BEING THE SUBJECT OF A SPECIAL REPORT TO THE SURGEON-GENERAL OF THE UNITED STATES ARMY.]

By E. L. SWIFT, M. D.,
ASSISTANT SURGEON, U. S. ARMY.

The various operations which have been devised and put into execution for the relief of inguinal hernia are, up to the present date, so numerous that to attempt a description of them would far transcend the purpose of this article. Each of them has at one time or another assumed a prominence in different parts of the world because of its merits at the time, or because of the influence of its originator or that of its subsequent adopters. When we recollect that several competent authorities have estimated the number of the ruptured in this country alone as in the neighborhood of three million, we must appreciate the fact that such an important malady can not well be too much discussed.

Malgaigne estimated that in France one male out of every thirteen was ruptured, and, as there is no reason for supposing that this affliction existed to any less extent in the olden times, it is to be presumed that the ancients resorted to many and divers expedients for its relief. And when we reflect what must have been the disability thus produced in the days before the truss had been thought of, we wonder the less that patients were often found who were willing to undergo a castration if such promised them a means of relief from their suffering. That this operation was frequently done in ancient times with this end in view we know, and even to such an extent as to call forth an edict against the practice from the Roman Emperor Hadrian, which inflicted the punishment of death upon the operator.

Celsus paid his entire attention to the sac, which, it is believed, he excised, deeming that he had then gone to the root of the difficulty. In this connection it is of interest to note that, long after all operations for hernia had fallen into desuetude and the antiseptic era had arrived, surgeons reverted to the methods of eighteen hundred years ago, and simple ligation of the sac with removal became the order of the day.

Very promptly, however, certain pioneers, both here and abroad, began to appreciate the true surgical indications of the case and to apply to it the principles of plastic surgery. "Coming events cast their shadows before," and in this instance Gross cast a very long and premature shadow when in 1858 he twice performed the plastic operation for hernia, using silver-wire suture, curing both patients. In 1879, Marcy, of Boston, twice did the plastic operation, using catgut sutures and ignoring the sac. In 1873, Steele, of England, closed the ring with sutures. No general interest, however, seems to have been evoked by these brilliant surgical triumphs.

In 1876 Czerny, of Heidelberg, published his cases and described his method. He applied a high ligature to the sac and sutured together the pillars of the external ring and the conjoined tendon. Operators everywhere now began to embrace this method, which became known in different countries under different names—in Germany, as the Czerny operation; in England, as Banks's operation. However, on further experience, it was found that forty or fifty per cent. of the cases operated upon finally relapsed. Surgeons then attempted other methods which they hoped would improve their statistics.

Barker and Riesel ligated the sac, but left it *in situ*, so as to plug up the canal, and then sutured together the structures of the canal and external ring very much as in the Czerny operation.

Bell, of England, retained the sac, which he twisted, ligated, and finally transfixed by passing his sutures through it and into the pillars of the external ring in each side.

Macewen, of Glasgow, now came forward with the suggestion that the sac be retained and put to a new use. He transfixed it by passing the suture back and forward through it several times in a transverse direction, each transfixion carrying the thread further from the distal end of the sac, where it commenced in a knot. The suture was then carried up into the abdominal cavity, and the sac attached just above the internal ring.. As the thread was drawn tight, the sac was thrown into transverse folds and lay on the internal ring. The idea was that it would act as a plug, to close up the internal ring. The canal was narrowed by sewing the conjoined tendon to Poupart's ligament and the pillars of the external ring together.

Several other expedients were resorted to by different surgeons with the same end in view of utilizing the sac, and, even quite recently, Kocher advocated drawing the sac through an opening made in the aponeurosis of the external oblique over the internal ring on each side and to Poupart's ligament.

McBurney now took a decidedly backward step when he advocated the tamponing of the wound, after ligating and excision of the sac, thus forcing it to heal by granulation, and favoring the formation of a mass of cicatricial tissue, which he presumed would act as a barrier to the recurrence of the hernia.

In 1888, Bassini, and in 1889, Halsted, devised the operations which bear their names. They raised the cord and went to work systematically to reconstruct the posterior wall of the canal and narrow the internal opening. Halsted even went so far as to close entirely the site of the old internal ring and form a new opening for the cord in the muscular tissue to its outer side, while at the same time he obliterated the canal and raised the cord, so that in its new course it lay upon the aponeurosis of the external oblique.

Bassini, on the other hand, dissected up this aponeurosis and united it over the cord, thus restoring the canal to its previous relations.

Both of these are brilliant operations, yet I regard each as possessed of several defects. The tissues surrounding the opening which Halsted makes in the abdomen through the muscular substance external to the internal ring I do not believe have as much resisting power as those of the internal ring, when properly reconstructed. In this operation there is also a suture, closing the line of the incision in the abdominal muscles, on each side of the new opening. In other words, there is a weak point, or cicatrix, on each side of the opening. Are we not already quite familiar with the tendency to give way that so frequently manifests itself in laparotomy cicatrices? When you have a permanent opening through such a cicatrix, would not such a result be all the more apt to occur?

The lifting up of the external oblique aponeurosis in the Bassini operation seems to me a sacrifice of valuable and strong tissue which, if carried under the cord, could hardly fail to add great strength to the posterior wall of the canal. The amount of protection that this thin aponeurosis is able to afford to the cord, when thus made to overlap it, can amount to little or nothing, in view of the fact that you always have an abundant covering of skin and subcutaneous tissue. The oblique direction of the cord can benefit nothing when the posterior wall of the canal and the internal ring have a sufficient resisting power to retain the abdominal contents; when they have not, it can afford no assistance. Practically, the cord assumes an oblique direction after any of these operations.

The operation which I recommend is as follows: The external incision commences a little below the level of the anterior superior iliac spine and about an inch internal to it. It extends downward to the pubic spine, parallel to Poupart's ligament, and about half an inch to an inch above it. This extends down to the aponeurosis of the external oblique, which is well exposed. A Kocher's director, or the finger, is passed through the external ring, and the canal slit up to the internal ring. As the operation proceeds, all the bleeding should be promptly stopped by dry gauze, or ligature when necessary, so as to prevent the staining of the tissues and resulting obscuration of the field of operation. The hernia if still unreduced should be returned, with or without first opening the sac, as may be required. The sac is now isolated from the cord by blunt dissection. If the sac can not be readily found, hold up the mass, find the vas deferens, and, while guarding it from injury, make a longitudinal incision into the mass. This procedure will be found to open up the sac. Insert the finger into the sac and well up into the internal ring and ligate with catgut around it as high as possible, withdrawing the finger gradually as the assistant tightens the ligature. Excise the sac below the ligature. While the cord is held out of the way, pass three or four (in extreme cases more) sutures through the transversalis fascia, conjoined tendon (if necessary also through the rectus abdominalis), muscular fibres of the transversalis, internal oblique, and aponeurosis of the external oblique, on the one side, and about three eighths of an inch from their edges. The sutures are double-threaded and are passed from within outward. Both free ends of each suture are now passed through the deep part of Poupart's ligament, about half an inch apart, and tied. Care should be observed that the suture next to the cord does not interfere with its circulation. The next step in the procedure consists in overlapping the superficial edge of Poupart's ligament and lower part of the cut aponeurosis of the external oblique and sewing it well up on the anterior surface of the latter muscle. It should be drawn firmly up, and the line of sutures not placed so near the edge as to soon tear through. In addition to this a couple of sutures should finally be placed back of the last line, which should pass through the overlapping Poupart's ligament and take generous bites of the overlapped structures. The last sutures are about midway between the others, and serve to hold the flap the more securely. When there is a condition of enlarged veins of the cord, I believe in Halsted's procedure of reducing their number, and when the cord is otherwise large I peel up some of the redundant tissue. The canal is now obliterated and the cord lies subcutaneous. The suture material consists of catgut hardened in iodoform and alcohol, or in mercuric bichloride and alcohol. No drainage is used, except in large hernias, when a few strands of silkworm gut are inserted. Usually only a few strands of this material are placed under the skin, and removed at the first dressing. I advise six weeks in bed or a truss for that length of time.

Fort Slocum, New York Harbor, *September 18, 1897.*

NASAL BOUGIES AND DRAINAGE-TUBES.

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After operation upon a nasal synechia, as well as after some sæptum operations, particularly if deflection has been a factor in the malcondition, it is often desirable and advantageous that the patient should for a time wear some form of nasal bougie or drainage-tube to prevent the touching of opposing traumatic surfaces. Such device will also retard swelling of the involved parts, and, through its constant pressure, will induce quicker absorption of inflammatory products. In the case of deflection it acts as a splint or support to the bended sæptum, whereby it is held in its new position. If such appliance be hollow it may still better assist in drainage, and will incidentally help in the maintenance of respiration through the nostril which is being treated.

There are on the market several styles of nasal drainage-tubes, designed for this purpose, made of either hard or soft rubber or of metal, and in some cases perforated to better assist in drainage. While there is much variation in the length, size, and shape of the different styles obtainable, I have found them all, with but a single exception,* to possess one common characteristic, and that is that in cross section they all more or less resemble a flattened or distorted O. In any canal, such as the urethra, which is susceptible of being made to assume any shape, from that of a flattened tube to a perfect circle, an instrument of such form is desirable, but for use in a passage-way such as the nostril it can be easily demonstrated that it is unscientific and to a large degree impracticable. In order to properly state the case it will be necessary to direct attention briefly to a consideration of nasal anatomy. Fig. 1 is designed to show a vertical cross-section of the nasal fossæ at a point two inches and a half back from the tip of the nose. The sketch will of course be recognized as being only diagrammatic, and therefore shows a sæptum almost phenomenal on account of its being perfect. Without going further we can deduce a first conclusion—that nasal bougies or drainage-tubes, in order to even approximately conform to the anatomical requirements, should be made in pairs—that is, rights and lefts.

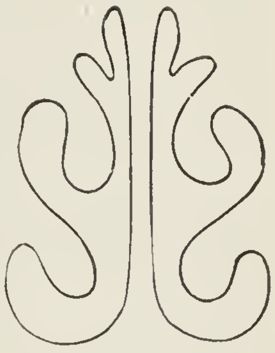
Fig. 1.

And now to proceed further, it will be observed that while the sæptum surface of either naris is approximately plane, the outer or turbinal surface is corrugated, owing to the convolutions of the turbinated bodies and the accompanying meatuses; hence we must deduce a second conclusion—that while the sæptum surface of the device under consideration shall in shape be between the plane and slightly convex, the outer or turbinal surface should be so shaped as to fit a convex body, or, in other words, should be concave.

I have for the past eighteen months been experimenting with the object of producing drainage-tubes which would conform to the requirements noted in the premises, and in my experiments I have been greatly assisted by Messrs. George Tiemann & Co., who have adroitly constructed for me models as illustrated. For patent reasons there are shown devices for one side only. In order to arrive at a correct external shape for the proposed drainage-tube, experiments were made with a solid hard-rubber model or form which was from time to time changed and improved. This solid form I have since designated as a nasal bougie (Fig. 3), and have found it often to be of value in place of the drainage-tube, as will be later explained.

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* Beman Douglass in *Manhattan Eye and Ear Hospital Reports*, January, 1897.

In the description I shall first consider the drainage-tube which is made of red vulcanite for either naris, and is illustrated by Fig. 2.

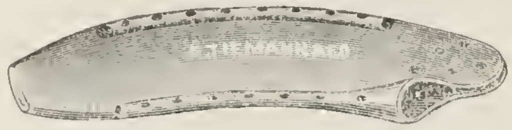

Fig. 2.—Drainage-tube for right naris (two-thirds size).

This tube is intended for use against the inferior turbinal only and is three inches in length, which, after repeated measurements, has been found to be the best length for the adult nose. Intranasal surgery, after which a drainage-tube would be required, is seldom done except in an adult. To increase its drainage power this tube has been provided with a few perforations, which open into the meatuses, the edges of which have been carefully rounded or made "velvet-eyed," so as to slip easily over tissue projecting therein when the tube is being removed.

The slight irregular curve of the entire tube, being both vertical and horizontal, is to facilitate easier introduction and to conform to Nature's requirements, as, in all her handiwork in the human body, she seems to studiously avoid straight lines. The large perforation at the forward end of the tube is for the introduction of any little blunt hook to assist in removing the tube.

As an incident, due to the theoretically required concavity of the turbinal side of the tube, in combination with the avoidance of sharp corners, this instrument in vertical cross section presents a crescent shape with blunted and thickened points, which combine to give it strength physically and advantages surgically as follows:

A. By forming ledges which respectively fit in the proximal meatuses, thereby insuring the tube's remaining just where it is placed. As compared with this, the general form of flattened elliptical tube will work either up or down, as the cocaine contraction passes away and is followed by inflammatory swelling, thereby causing the displacement of the tube and permitting the touching of opposing surfaces, one if not both traumatic, and even in the former case the unwounded membrane often becoming so irritated that a synechous union results.

B. Through these ledges, which increase the thickness of the tube at its upper and lower edges, there is given much greater drainage capacity, and at these points the perforations are much less liable to become stopped up by swelling of the wounded tissues, as they open into the meatuses.

C. These ledges, by giving a corrugated surface, materially increase the strength of the tube.

These tubes, as described, were occasionally found to be too thick for easy introduction. After experiment it was decided to be impracticable to have them hollow and perforated if made any thinner, hence a return was made to the solid models or nasal bougies (see Fig. 3), which are finished in two sizes as regards thickness, but are otherwise of the same dimensions as the drainage-tubes, and like them are made of red vulcanite, which, after repeated and various tests, I have found to be superior to black hard rubber in all ways except in weight, it being the heavier of the two in the ratio of five to three, though in so small an instrument the slight additional weight is of no disadvantage.

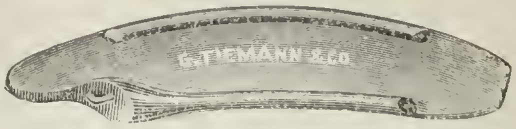

Fig. 3.—Nasal bougie for left naris (two-thirds size).

I have found these bougies to be easy of introduction in all cases wherein their use was called for. By dipping them in hot water for a moment any slight change in curve can be easily made as desired. They are readily withdrawn by the aid of the small loop shown, and generally the drainage they give is sufficient for all purposes. In fact, they improve upon acquaintance, and in many cases can advantageously supplant the drainage-tubes. If removed during the first two or three days after the operation, a little cocaine may be required in order to re-introduce them, though I find the nose soon becomes tolerant to their presence, and they can be safely left in position, without removal for cleansing, for periods of a week, ten days, or even longer if desired, providing no evidence of sepsis is manifested. In one case a drainage-tube was thus allowed to remain ten days without annoyance, though the patient used a warm carbolized douche night and morning with the precautions later noted. In cleaning the drainage-tubes, immerse for a few minutes in a strong solution of bicarbonate of sodium and follow with a stream of compressed air of fifty or sixty pounds pressure.

Another purpose for which I have found the bougies admirable is in the reduction of a recently fractured sæptum. An appropriately sized bougie, generally the thickest one which can be inserted, is introduced as a splint in the nostril presenting the greatest sæptal concavity. Strong pressure is then made with a suitable instrument against the convexity in the opposite nostril. The bougie already in place prevents the sæptum being pushed over too far. After the straightening a second bougie should be introduced on this side, so that there will be a bougie remaining for two or three days in each nostril. They can be daily removed, one at a time, by the surgeon, who, by administering a hot one-per-cent. carbolized douche, will give the patient much comfort. The quantity used in either naris should be one pint from a fountain syringe, and for a syringe tip I have found a straightened hard-rubber Eustachian catheter the best. The patient should be stooping over a washstand and the douche must escape from the same nostril in which it is being injected. The fall from the reservoir should not exceed one foot, and the tip is to be introduced about two inches and a half into the nose. After the use of the bougies has been discontinued the patient is directed to take the douche, as described, three or four times daily for as many days.

Columbus Memorial Building.

ON THE MECHANICAL TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR

WITH TRACTION APPARATUS PRODUCING ABDUCTION OF THE THIGH, AND DIRECT LATERAL PRESSURE OVER THE TROCHANTER MAJOR.*

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On the 16th of December, 1885, I was asked to examine Mr. M. P. G., aged forty-two years, who gave the following history:

Case I.—On the 1st of October, 1885, Mr. G. was thrown from his horse and sustained an intracapsular fracture of the neck of the femur on the left side. The accident occurred a few miles from New York, and the patient was at once brought to his city residence, where he was treated by the "Buck's extension" method under the most favorable conditions by one of our best-known surgeons. At the end of ten weeks an examination proved that the fracture had failed to unite and the patient was given to understand that he must expect to be lame all his life—the alternative of a surgical operation being positively declined by him. I had known the patient previous to the accident, having prescribed for a weak knee of the right leg. He sent for me to ask if anything could be done from an orthopædic standpoint. At first I was inclined to advise the surgical procedure, but the patient declined to entertain any proposition of this nature. He was possessed of an indomitable will, and he said he would undertake anything which I suggested which would give a chance for recovery, or even relief.

Three cases of ununited fracture of the shaft of the femur—two at about the middle of the femur and one just below the trochanter minor—had come under my observation and treatment, and had been successfully treated by the long traction (hip) splint and an accurately fitted coaptation splint; and two cases of unilateral congenital dislocation of the hip joint had been very much benefited by the same method of treatment; the coaptation splint in the latter cases being a firm belt properly padded, passing around the pelvis, making a direct lateral pressure over the trochanter major. In all these cases the limb had been restored to approximately its normal length by the traction splint, and this length had been maintained for a sufficiently long period. Complete bony union had resulted in the fracture cases, and an improved position with a firm artificial joint had resulted in the dislocation cases. I had long felt that the treatment of recent fracture of the neck of the femur lacked especially a sufficient means to control the fragments and keep them in apposition; but no opportunity to treat any recent cases of this nature had presented itself in my practice.

I explained to Mr. G. the method by which we might hope to secure a union of the fracture, based upon the results just related, but I also informed him that it would be an experiment and that I would not undertake it unless the plan was approved by a formal consultation. The late Dr. Henry B. Sands, who had been familiar with my ununited fracture and congenital dislocation cases, was consulted, and after examining Mr. G. he gave the proposed treatment his fullest sanction.

The thigh and leg were in the characteristic position of fracture of the neck. There had apparently been no attempt at union; a flail-like movement was present at the point of fracture and the limb was two inches and three quarters shorter than its mate. The patient was in excellent health and spirits, and the experimental treatment was commenced under favorable auspices.

On Christmas day, 1885, the long, straight, Taylor hip splint was applied. This was almost to a day twelve weeks after the original injury. In four days the limbs were of equal length. A belt, about three inches and a half wide, made of surcingle material, such as is used by saddlers, was now passed around the pelvis, a crescentic-shaped horsehair pad being placed over the trochanter major. This belt was firmly buckled at the opposite side of the pelvis. The limb was now placed in abduction at an angle of about twenty degrees, the origin of the adductor muscles being used as a fixed point to throw the distal toward the proximal fragment. A lever was thus created where the fulcrum (the origin of the adductors) was between the power (the lower end of the limb) and the resistance (the seat of the fracture). The entire limb was now placed on an inclined plane at an angle of about a hundred and thirty-five degrees.

I felt very sure, as I studied the conditions from day to day, that the traction maintained the length of the leg, and that the abduction of the thigh approximated the fragments. But I did not feel certain that my "surcingle" was making a sufficient lateral pressure. I felt that the "surcingle" was the weak point of my apparatus. I then further increased the lateral pressure by passing a tourniquet over the padded surcingle, and after that I had at hand the means of absolutely controlling the lateral pressure. When the patient was moved in bed for any purpose, or when the traction was modified in any way, or when the perineal pads were loosened, the tourniquet pressure was carried up to the point of toleration. At other times the tourniquet pressure was modified. This pressure did not give rise to any trouble, nor did it seriously interfere with the circulation.

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* Read before the American Orthopædic Association, in Washington, D. C., May 4, 1897.

Among the objections urged by some of my critics and friends in Mr. G.'s case was one which especially appealed to me. The knee joint had already been immobilized about twelve weeks, and it was justly feared, if the fixation of this joint was prolonged during a further period of, perhaps, months, that it might become seriously damaged. Before applying the straight traction splint, I had therefore carefully measured the patient for an apparatus which combines all the advantages of the straight traction splint with an arrangement at the knee by which motion could be secured at this articulation whenever necessary.

On January 3, 1886, I applied this splint. I will briefly describe it.* It has the conventional pelvic band, which is strong and solid, with the ordinary perineal pads. It has an abduction screw, by which the shaft of the apparatus can be placed in any desired lateral position, and it has a mechanism at the knee by which motion can be made whenever desired at this joint. It also has two traction rods, one at the thigh part and one at the leg part, each with separate adhesive-plaster attachments. By this arrangement, traction can be made upon the thigh, while that at the leg is removed or modified. During the treatment, after the first two weeks, the patient was drawn down to the foot of the bed, until the knee joint was opposite this point. The leg traction was then modified, and the thigh traction increased. We were thus able to flex the leg without disturbing the thigh traction. While this was being executed, the tourniquet pressure was greatly increased. The knee was thus "exercised" every second day without trouble and without pain and without any detriment to the fracture.

On the 19th of January, 1886, Mr. G. was successfully removed to Lakewood, New Jersey. On the 28th of January he was placed on his feet with the use of crutches, a high shoe (two inches) being placed under the foot of the sound limb. He commenced at this time to walk on crutches, until he daily walked half a mile or more out of doors. He was allowed to stand up or to walk at will, but he was never permitted to sit down, or to try to sit down. His health remained good in every way, and on April 11th, about four months after treatment was commenced, Dr. Sands saw the patient with me and found a solid bony union. It was deemed best, however, not to discontinue the protection of the traction apparatus. A modified (perineal support) treatment was kept up until June 5th, when he was discharged cured.

At the final examination the limb was found to be three fourths of an inch shorter than its mate. The patient could walk well. He did not need a high sole to compensate for the difference in the length of his legs. All the motions of the hip were somewhat modified. Flexion was almost complete; abduction and adduction were slightly less than normal; extension of the thigh was resisted somewhat, while rotation in and rotation out were somewhat limited.

I saw Mr. G. in London last summer. No one would notice that he had anything more than a peculiar gait. He is not lame. He walks long distances, hunts and rides on horseback, plays tennis, etc., as well and as actively as if his hip had never been injured.

CASE II.—On the 9th of October, 1889, I saw Miss X., aged forty years. Eighteen months previously she had received an injury in Europe, and had sustained a fracture of the neck of the femur. The limb was three fourths of an inch shorter than its mate and a distinct "telescoping" could be demonstrated, as well as a distinct crepitus, at the point of fracture. In consultation with Dr. Charles McBurney on October 15th the diagnosis of intracapsular fracture was confirmed. I submitted to Dr. McBurney a plan of treatment similar to that which had proved successful in Mr. G.'s case, and he expressed himself as fully approving the effort. The patient was informed that the issue would be doubtful, and that the length of time which had elapsed since the injury made the treatment an experiment. After due deliberation she decided to make the attempt.

It was decided to pursue the treatment for three months, and then, if there was no evidence of union, the effort was to be abandoned. Accordingly, on October 30th, the long traction splint was applied with the abduction screw, the surcingle, and the tourniquet, and the same treatment outlined in the previous case was very carefully carried out. The patient was seen by Dr. McBurney on November 15th, and again on December 6th. On February 1, 1890, three months after the first application of the traction splint, the apparatus was removed, and Dr. McBurney and myself made careful and thorough tests of the fracture. The telescoping had disappeared, and the crepitus could not be detected. There seemed to be a pretty firm union of some sort, though whether it was ligamentous or osseous we could not decide. The patient could not raise the limb from the couch with the knee extended, though she could rotate it through quite a considerable arc. It seemed that there was enough to encourage us to make a further effort. Before doing anything further, however, we decided to remove the apparatus for a couple of weeks to see if any shortening took place. After nineteen days no shortening had occurred. The traction apparatus had brought the limb down half an inch, or within a quarter of an inch of its normal length, and for nearly three weeks, without any apparatus, except the surcingle during the day, this length had been maintained. The patient went about on crutches. During the interval, Dr. W. T. Bull also saw the patient and examined the conditions present. Both he and Dr. McBurney deemed the evidence, while not positively indicating bony union, as affording a hope that this result might occur. On February 25th the treatment was again commenced and it was steadily maintained until the 6th of May, when Dr. Bull again saw the patient. The conditions again seemed favorable, but not positively indicating bony union. There was no telescoping; no crepitus; no shortening under severe manual tests. Indeed, there was some sort of union. It was hoped that it might prove to be bony union. Up to July 1st, when I went away on my vacation, the limb had not shortened. No direct evidence of fracture could be elicited, and yet there was an expressive disability about the limb which pointed to an uncertain result. It was proposed at this juncture to apply a perineal walking support, so as to maintain the advantage gained by the prolonged treatment, but the patient had had a previous very unpleasant experience with an apparatus of this kind, and positively refused to have one adjusted. After I went away the patient came under the care of Dr. Bull. The patient was instructed to use the limb with the protection of crutches and to gradually bring the weight of the body upon the fracture. During the summer, under these conditions, the old condition gradually returned. The telescoping reappeared, the crepitus came back, and the thigh slipped back to its old position of three fourths of an inch shortening. The result was a failure after all.

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* Further experience proves that this complicated form of apparatus is not necessary. A simple, long traction hip splint, based upon the Davis-Taylor principle, and which can be obtained from any instrument maker, answers every indication in both acute and chronic cases.

It would seem, however, even in this case, where treatment was commenced eighteen months after the fracture occurred, that Nature made an effort to secure union. It was a pretty firm union too, and one which, for a while, resisted all ordinary tests. It may even be that had the treatment been absolutely uninterrupted, and had it been persisted in for a longer period, with a perineal support after actual treatment was stopped, a serviceable union might have resulted.

I do not propose on this occasion to review the various methods which have been devised for the treatment of fracture of the neck of the femur. Both of these cases were ununited fractures and they came under my care because the conventional method had failed. The means used were the result of some thought and study upon the subject, and when I treated Mr. G. there was nothing that I could find in medical literature to guide or aid me.

Since my first case, Dr. Nicholas Senn has published an able essay on The Treatment of Fracture of the Neck of the Femur by Immediate Reduction and Permanent Fixation. This essay is published in the *Journal of the American Medical Association* for August 13, 1889, and it presents a comprehensive review of the subject, and the author reaches conclusions which I think the medical profession must approve as applied to recent cases of this class of fractures.

Dr. Senn depends, however, upon manual traction for the first reduction of the fracture, and then adds a comprehensive gypsum splint with a screw pressure over the trochanter major. No attempt is made to throw the fractured ends together by abducting the limb, and he depends upon the fixing power of the plaster-of-Paris splint to maintain the traction induced by the first manual effort.

What I deem to be the essential element in the treatment, both of cases of recent and ununited fracture, could not be successfully carried out by the use of the gypsum splint alone, viz., the permanent abduction of the thigh. The gypsum splint would not have sufficient resistance to hold the limb against the unremitting action of the adductor muscles. A constant and easily adjusted form of traction is needed to secure this result, and if this traction is successfully kept up the lateral pressure upon the trochanter may be very materially reduced.

A few words in closing: My experience leads me to say that the tourniquet pressure over the trochanter major will not produce any excoriation or any serious interference with the circulation. In neither of my cases did it produce anything more than inconvenience. Indeed, I was surprised to find how little pressure was needed to maintain the fragments in apposition with the conjoined rack and pinion traction and abduction. Still further: The long traction splint (Taylor's), such as is used in the treatment of hip-joint disease, with an abduction screw at the junction of the traction rod with the pelvic band, and with the surcingle and tourniquet, makes a complete apparatus for the treatment of recent cases of intracapsular fracture. It meets all the indications, and certainly, if good results can be obtained in cases of non-union of long duration, its use is strongly indicated in acute cases. The ease with which the patient can be placed upon a bedpan, etc., the certainty that the fractured ends can always be kept in apposition, the readiness with which the patient adapts himself to the treatment, the rapidity with which he gains confidence and walks about with the high shoe and crutches, and finally the absence of a complicated technique, all commend this method.

The above remarks were submitted to the Surgical Section of the New York Academy of Medicine on June 13, 1892. Since that time the following cases have occurred and are herewith appended to this report. The paper was not published for the reason that it was deemed best to secure additional evidence before finally presenting the matter to the medical profession.

Case III.—Reported by Dr. T. Halsted Myers. J. W. D., aged forty-two years. While driving, the patient was thrown from his carriage and was stepped upon by the horse. Inability to stand and great pain were immediately observed. Nine weeks after the accident, on September 24, 1894, Dr. Myers found five eighths of an inch shortening, bony crepitus, "telescoping" at the neck of the femur, and the characteristic position of fracture at the neck of the femur. On October 3, 1894, the long traction splint was applied and the patient, who was obliged to support himself, went about on crutches, with a high shoe on the sound limb. A pelvic girdle was also applied soon after the treatment was commenced. On January 4, 1895, all pain had ceased and the telescoping and crepitus had disappeared. Although still advised to keep quiet, the patient insisted upon going about on crutches. On January 25, 1895, a "short splint" was applied, the crutches and surcingle being continued. On May 10, 1895, the evidences of bony union being positive, all apparatus was removed. The patient had no pain and walked well.

At an examination made February 21, 1896, perfectly firm bony union was found with excellent motion at the hip joint. Patient rides horseback, etc., with ease. Shortening, half an inch.

Case IV.—C. M., aged twenty-two years, a Norwegian sailor, applied at the New York Orthopædic Dispensary and Hospital on November 16, 1894, with the following history: On May 24, 1894, he fell several feet aboard ship, injuring his left hip. He was treated in a general hospital in this city for five weeks, with a plaster-of-Paris splint, the patient says, for dislocation of the hip joint. After five weeks he was discharged, walking upon crutches. There was no further treatment, and the condition not improving the patient applied to the dispensary, as above stated.

On examination there was found an inch and a quarter shortening of the affected limb, a distinct crepitation, nearly an inch of "telescoping," and the characteristic position of intracapsular fracture of the neck of the femur. This diagnosis was made and confirmed at subsequent examinations.

As the patient had no home and was living in a sailors' boarding house it seemed useless to attempt to commence treatment. After a time I succeeded in obtaining permission to have the patient enter the Presbyterian Hospital, where, through the courtesy of Dr. Andrew J. McCosh, attending surgeon, the writer was permitted to give the patient his personal attention.

On January 21, 1895, nine months after the accident, with the assistance of the house staff of the hospital and Dr. Hibbs, house surgeon to the Orthopædic Hospital, a long traction hip splint was applied, the surcingle belt was adjusted, the thigh abducted, by making the distal perineal pad of the apparatus tight before making the traction, and the limb placed on an inclined plane at about a hundred and thirty-five degrees. At this time careful measurement showed an inch and a half of shortening.

Dr. Hibbs assumed the personal care of the patient and saw him regularly.

On May 23, 1895, I examined the patient and found evidence of bony union. It was advised that the same treatment be continued, however, as it did not seem positive that the union was complete.

On July 30, 1895, bony union was complete; the patient could raise the foot from the bed with the knee fully extended. The use of the apparatus was continued, and the patient was directed to get up and move about with crutches and a high sole to the unaffected limb. There was three fourths of an inch shortening.

As the patient had no home he was kept in the hospital by the kind permission of the authorities until December 17, 1895, when he was discharged well, with three fourths of an inch shortening.

On November 17, 1896, when I saw the patient last, he still had three fourths of an inch shortening. At that time his gait was good and he had been at work for some months. The bony union was very firm, and every function of the joint was well performed, except that there was some limitation of motion at the hip in all directions. The knee joint was about normal in its movements.

Other cases of impacted fracture accompanied by pain and great disability have been treated by this method with much success. Dr. Myers reports two and the writer has had three, in all of which rapid improvement followed the use of the traction splint in a few weeks or months. In all these cases crutches with a high sole were used during locomotion.

INTERMITTENT FEVER IN CHILDREN,

WITH SPECIAL REFERENCE TO ITS ORIGIN IN NEW YORK.

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The words of Koheleth, "An increase in knowledge brings an increase of pain," are thoroughly appreciated by those who watch the rapid revolution of theories concerning the nature, etc., of the diseases caused by specific micro-organisms. Views which previously have been considered indisputable facts are now painfully looked upon as ridiculous hypotheses. For instance, malarial disease, until the discovery of its plasmodium, was supposed to be thoroughly understood, requiring no further study; indeed, whenever the symptoms of another disease were obscure, the snap-diagnosis "malaria" was quite convenient to fall back on. At present it is a subject of great controversy obscured by numerous fancy theories. The author, therefore, believes that an effort toward its elucidation from a practical standpoint will not be considered superfluous.

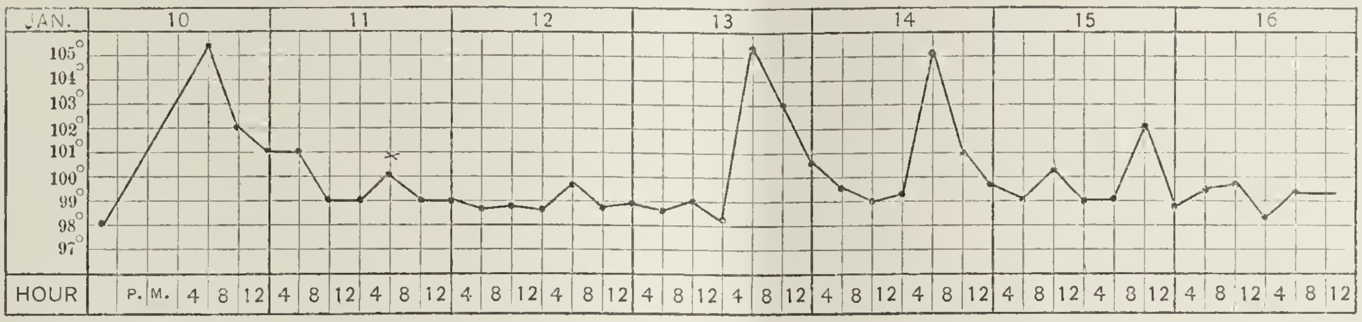
That the patience of the reader may not be overtaxed and no doubt raised as to the genuineness of the cases in question, the writer proposes to contribute his observations made in cases of typical intermittent fever in children only, leaving those of the adult and the cases of remittent and irregular fever for future discussion.

From January 5, 1896, to June 15, 1897, sixteen cases of intermittent fever were admitted to the hospital of the Hebrew Sheltering Guardian Society Orphan Asylum. This institution is situated on Washington Heights, at One Hundred and Fiftieth and One Hundred and Fifty-first Streets and Western Boulevard, upon dry, rocky ground, about five hundred feet distant from, and one hundred feet above the level of, the Hudson River. A great part of its neighborhood is as yet but little cultivated. The locality, taken as a whole, ranks among the finest and healthiest in New York city. The comparatively little sickness occurring in the asylum substantiates this assertion.

As a minute description of each and every case would certainly prove tedious to the reader, the writer therefore prefers to enumerate them in tabular form, excepting the following two cases, which offer a few points of special interest:

Case II. *Quartan-quotidian.*—S. S., aged thirteen years (see chart), who has been an inmate of the institution about four years, always having enjoyed perfect health, was admitted to the hospital on the 10th day of January with severe headache, nausea, and vomiting.

He was soon attacked by a marked chill of fifteen minutes' duration, followed by a hot and sweating stage. The temperature rose to 105° F., and fell to normal after sixteen hours. After a brisk cathartic, the administration of quinine in large doses was begun the next day (January 11th). On the 13th, 14th, and 15th of January, at about the same hour, the paroxysms occurred again, while a slight elevation of temperature continued until the 17th.



* ADMINISTRATION OF QUININE BEGUN

CASE XV. *Tertian-quotidian-tertian.*—After showing signs of ill-health for two days, J. M., a girl aged four years, was brought to the infirmary June 1, 1897, at 12.30 P. M. The countenance was livid, appearing swollen; the eyes were slightly congested and the eyelids were puffy. The child complained of being cold and shivered violently. Hands and fingers were cold, and finger and toe nails blue. After twenty minutes the rigor ceased; the child vomited. The temperature, 105° during the chill, fell to 104° after the vomiting. Lividity disappeared. Skin was very hot and dry; face sallow, and temperature rose again to 105°, with pulse 140, respiration 34. Child delirious and experienced great thirst. Hot stage lasted three hours, when sweating set in. Temperature declined, and patient was perfectly comfortable after six hours. At 10.30 A. M. on June 3d she was again taken with chill of twelve minutes' duration, followed by severe nausea and vomiting. Hot stage lasted until 2 P. M., during which time temperature rose to 106°, respiration 62, with pulse 180 to 200 (repeatedly counted). At 8 P. M. attack was over. Administration of quinine begun; child sweated more or less continuously until June 5th, when at 12.30 P. M. a slight lividity and temperature-rise of 104° (respiration, 38; pulse, 148) occurred. Three hours of hot stage was followed by sweating, and at 9 P. M. the patient again felt comfortable. No recurrence of the paroxysms. Quinine in smaller doses continued until June 16th, when the child was discharged.

Four days later, readmitted with parotiditis (there being several cases of it at that time), presenting no constitutional symptoms.

June 28th, 5 P. M.—Attacked with chill lasting ten minutes. Vomiting, hot and sweating stage the same as in previous attacks. Temperature continued moderately high until 6 A. M. the following day (June 29th). In the evening, 5.30, lividity of face and hands; temperature rose to 106°. This condition continued for about two hours, profuse sweating followed, and temperature was normal at 6 A. M. No paroxysm the next day.* Vomiting at 6 P. M. (about the time the chill was to have taken place). On the following day, July 1st, 4 P. M., temperature rose to 104°, fell again two hours later to 102.5°, and was recorded normal at 12 M. Administration of quinine begun (July 2d) and continued for two weeks. The last attack took place on the 3d of July.

Reviewing the foregoing table, it will be found that of the sixteen cases the quotidian type was met with eleven times, the tertian three times, quartan and quotidian once, tertian and quotidian once. Chill, as well as sweating stage, was absent in two cases.

Chill alone absent in three cases. Enlargement of spleen in three cases.

Frequent examinations of the blood, undertaken at different stages of the disease, universally revealed the

Table of the Author's Cases of Intermittent Fever.

No.	Name.	Age.	Birthplace.	DATE OF ADMISSION TO		Type of fever.	Duration.	Variety of plasmodium in the blood.	Remarks.
				Asylum.	Hospital.				
1	B. G.	11	New York.	Dec., '93.	Jan. 1, '96.	Quotidian.	4 days.	Intracellular.	No chill nor sweating.
2	S. S.	13	Russia.	Sept., '92.	Jan. 10, '96.	Quartan and quotidian.	8 "	"	See chart.
3	E. L.	13	New York	May, '95.	Jan. 18, '96.	Tertian.	4–6 "	Intracellular and crescentic forms.	Three attacks within two months.
4	R. D.	11	"	May, '92.	Feb. 22, '96.	Quotidian.	3 "	Intracellular.	
5	E. L.	7	"	Aug., '93.	Mar. 5, '96.	"	3 "	"	
6	B. M.	6	"	Nov., '95.	Mar. 5, '96.	"	4 "	"	
7	S. W.	14	"	Feb., '93.	Mar. 22, '96.	"	3 "	"	
8	N. K.	12	Germany.	July, '91.	Mar. 31, '96.	"	5 "	"	No chill nor sweating.
9	F. W.	14	New York.	Nov., '93.	April 8, '96.	Tertian.	5 "	"	No chill.
10	F. C.	13	"	June, '94.	May 1, '96.	Quotidian.	3 "	"	No chill nor sweating.
11	A. S.	7	"	Aug., '93.	Nov. 17, '96.	"	2 "	"	
12	S. S.	8	"	April, '93.	Nov. 17, '96.	"	8 "	"	No chill; spleen enlarged.
13	I. C.	9	"	March, '93.	Nov. 17, '96.	"	6 "	"	
14	D. D.	6	"	May, '95.	Jan. 4, '97.	"	4 "	"	
15	J. M.	4	"	Dec., '96.	June 1, '97.	Tertian, quotidian, tertian.	6 "	"	Spleen enlarged. Two attacks within five weeks.
16	S. Sch.	7	"	June, '94.	June 14, '97.	Tertian.	6 "	"	

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* Fever changed from quotidian to tertian without the influence of quinine.

presence of the endoglobular pigmented and, at times, also the non-pigmented variety of the plasmodium. The blood of Case III contained in addition to the intracellular also the crescentic form of the protozoon. The examinations were conducted with the greatest care, and the diagnosis was verified by Dr. H. T. Brooks, pathologist to the Post-graduate Medical School of this city.

This finding supports the view of most authorities that the blood in every genuine case of malarial disease does and must present the parasite. This assumption, however, is not conceded by all, and we find that not a few just as eminent men—among them recently Dr. Thin (1) and Dr. Lawrie (2)—declare that not infrequently severe typical malarias do fail to show the organism. Of the same opinion is Dr. Ross (3), who observed the plasmodium in only sixty-nine out of a hundred and twelve typical cases of malaria in India, and Dr. Morse (4), who failed to find the organism in two out of twenty-six cases. While not in the least doubting the ability of these observers as hæmatologists, it may, nevertheless, be asserted that the parasite may have escaped their notice through some technical error. Indeed, at times, the failure to detect the plasmodium may be attributed to the lack of skill on the part of inexperienced assistants often intrusted with the microscopical examination of the blood. The very fact that the plasmodium is not found in the blood in any disease but malaria (5), and that transfusion of the blood of a patient into a healthy person often transfers the disease (6 and 7), proves beyond doubt that this protozoon is the specific cause of malaria, and that it migrates in the blood, and consequently must be seen there by means of the microscope.

Not quite as convincing is the assertion that each type of intermittent fever depends upon a special variety of the plasmodium. Dr. Golgi (8) and his followers distinguish two principal varieties of it: one which consists of fifteen to twenty spores and maturing in two days, producing febris tertiana; the other, made up of six to ten segments and maturing in three days, producing febris quartana. The quotidian type, they believe, is caused either by two crops of the former or three of the latter, one crop maturing every day. Dr. Laveran (9), the discoverer of the plasmodium, after examining the blood of patients suffering from the fever contracted in Tonquin, Dahomey, Senegal, and Madagascar, declares that he has never found the varieties of the organism described by some authors as peculiar to those types of malaria. The supposed peculiarities in the morphological structure of the parasite, he contends, are merely due to the difference in the degree of its virulence, which is comparable to the difference exercised by the climate upon the ordinary protozoa. Dr. Lenhartz (10), with others, to a great extent corroborates the view of Dr. Laveran.

Admitting that Dr. Golgi's theory is correct, the questions naturally arise: First. How can paroxysms of quotidian fever follow, as in Cases II and XV, the quartan or tertian types at the time when large doses of quinine (the recognized specific) are administered? Or, in other words, how can new crops of the organism develop under the influence of their specific germicide? This being impossible, Dr. Golgi's theory must necessarily give place to a more probable one, as, for instance, the following: There is but one variety of the plasmodium which may attack the human system infected by it, either every day or every two or three days, etc.; the frequency of the paroxysms depending not alone upon the virulence of the organism, but also upon the power of resistance of the patient. Thus the weaker the system and the greater the virulence of the protozoon, the more frequent the attacks, despite, or perhaps because of, the administration of large doses of quinine (for quinine in large doses debilitates the system by interfering with oxygenation, weakening the heart and lowering the blood pressure, etc. (11)), unless the quantity of it be sufficient to completely destroy the parasite. Secondly. How, on the other hand, can there be a diminution in the paroxysms (as in Case XV, quotidian changing to tertian (see note))—that is to say, an arrest of development of the organism during the height of its vitality—without any influence of quinine, unless it be vanquished by the power of resistance of the patient, as explained above? The latter theory is supported by the fact that children whose systems are comparatively feeble are mostly attacked by the quotidian, more rarely by the tertian, and very seldom by the quartan, etc., type of intermittent fever (12). Among the cases under discussion, only one boy, thirteen years old, was but partially attacked by febris quartana (see chart).

Quite as doubtful is the mode of infection; for no sooner was it agreed that infection was conveyed through the air or by water, than a new theory was advanced, putting forth the mosquito (13) as the heroic carrier. Dr. Rupert Norton (14) contends that there is at present no proof that the malarial organism lives in water, all evidence confirming the water-borne theory being insufficient to accept it as a settled fact. "We do not find," he says, "in towns or elsewhere, groups of patients whose infection can be traced to a single supply of water or milk." To refute this assertion, it may be noted that Dr. Harley (15) did observe an epidemic of malarial disease in his own family which was traced to the water of an artesian well. The epidemic ceased when the water was carefully sterilized, and recurred when this was omitted. Dr. Norton further confirms his view by remarking that drinking water from malarial regions does not produce the disease experimentally. This seems valueless against the water-borne theory, since not all water from malarial regions is necessarily impregnated with the malaria plasmodium. Thus, it may be assumed that the water experimented with was entirely free from the organisms, or that the parasite was destroyed in the stomach of the persons experimented upon.

The theory recently advanced, that the mosquito is a means of conveying malarial infection, lacks as yet reliable substantiation by positive experiments. Why, among so many other insects afflicting mankind, the mosquito only has been selected as the "chosen one" of carrying malarial infection, the writer is unable to comprehend. The occasional demonstration of the malarial organism in the bodies of mosquitoes does not prove that careful research would fail to reveal the same organism in the bodies of other insects. It is just as difficult to understand why, if this theory is true, the mosquito should not be endowed with the property of carrying the organism of relapsing fever, splenic fever, etc., as well as that of malaria. Both of these questions, together with the fact that malaria also prevails at those seasons of the year (see table) when mosquitoes are not to be seen, tend to show that the mosquito-mode of infection is a mere hypothesis.

As to the regional distribution of malaria, evidence is gradually accumulating that this disease is almost endemic in those places which have but a few years ago been considered exempt from it, except as an imported disease. New York is a good example in this country of the latter assertion. As recently as March, 1897, at the Academy of Medicine (16) the opinion prevailed that little, if any, malaria originated in New York city. In order to prove the prevalence of malaria in New York, two points must be taken into consideration: First, does malaria originate in New York at all? Second, if it does, can it be limited to but a few persons?

In reply to the first question, the reader is referred to the cases under discussion; fourteen of these were born in New York city, and all but one child were inmates of the institution for from two to four years previous to the attacks of malaria. As the children were never outside of the city, infection must consequently have taken place along the Hudson River front at One Hundred and Fifty-first Street, where the orphan asylum is situated. According to Dr. Holt (17), the neighborhood of Central Park is also a malarial locality.

Having concluded that malaria does originate in New York, and that, as mentioned above, infection is carried through the air and by water, it appears highly probable that a great number of persons who frequent Central Park and the river fronts, often remaining there for hours, partaking of the drinking water and enjoying baths, etc., do contract the disease there, thus saving the trouble of "importing" it. It is certainly ridiculous to read of the origin of hundreds of cases of malarial disease in adults being traced back to some locality outside of this city and State, simply because the patients reported, perhaps ten years before, visited that place.

Again, in children malarial disease is frequently overlooked, owing to the fact that the stages are so often masked, and the little patients rapidly recover under the panacea "calomel and quinine," which is administered anyhow, even though no diagnosis has been made.

That Dr. Walter B. James (18) could not find the parasite in the blood specimens of cases of possible malaria sent to him by New York physicians need not be at all surprising when it is considered that typical malarias are diagnosticated without microscopical examination, and are, therefore, very rarely sent to the bacteriologist, and that obscure cases requiring the diagnosis of the hæmatologist are, as a rule, treated, in conjunction with many other antiperiodics, with quinine, which destroys the plasmodium before the examination is undertaken.

This explanation applies to Philadelphia, Baltimore, etc., as well as to New York.

A few words regarding the administration of quinine to children will not be out of place. The writer has been in the habit of dissolving the sulphate of quinine in the white of an egg and administering it by the rectum. The white of the egg seems to prevent irritation and aid in the absorption of the quinine. The results were always excellent without unpleasant complications.

The contents of this paper may be summarized as follows:

(1) Intermittent fever in children is mostly of the quotidian type; the chill and sweating stage being often masked, it is not infrequently overlooked; the spleen is rarely enlarged if quinine is administered early.

(2) Genuine intermittent fever always presents the malaria plasmodium in the blood; its absence is due either to a technical error on the part of the examiner, or to the administration of drugs which are detrimental to it.

(3) The existence of the varieties of the plasmodium described by some authors as peculiar to quotidian, quartan, tertian, etc., types of the fever is still a subject of great controversy.

(4) Infection of malaria is conveyed through the air as well as by water. The mosquito theory of infection seems to be a mere hypothesis.

(5) Malarial disease is endemic in most of the larger cities of the North, especially New York; all doubts raised against it are not based upon scientific investigation.

(6) Intermittent fever yields promptly to large doses of quinine, a point of considerable value in the diagnosis. Persistency of the attacks may be attributed either to the exhibition of quinine in too small quantities for too brief a period, or to its administration in the form of the mercantile, heavily coated pill, which is, as a rule, insoluble and hardly ever enters into the circulation.

NOTE.—Since the completion of this paper, four new cases of quotidian intermittent fever have appeared in the asylum. The ages of the patients varied from three to five years.

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One Hundred and Fiftieth Street and Eleventh Avenue.

A PLEA FOR THE MORE GENERAL EMPLOYMENT OF INTESTINAL IRRIGATION AND RECTAL ALIMENTATION IN THE GRAVE DIARRHŒAS OF CHILDREN.

By WILLIAM J. ROBINSON, M. D.

Irrigation of the intestine is a well-established procedure in the treatment of infantile diarrhœas. It is described and recommended as a measure of the highest value in all the latest text-books on pædiatrics. By careful observers it alone is considered in certain cases to possess more power for good than all the drugs—opiates, antiseptics, and astringents—together. And yet how far, how very far, is its use from being general! Physicians will go on prescribing chalk mixture, bismuth preparations, salol, resorcin, naphthol, paregoric, etc., and this simple, common-sense procedure is not thought of. Whether this is due to a non-acquaintance with the virtues of the method, or to a lazy conservatism, or to lack of time, I shall not undertake to answer, but I shall report a case, the history of which will illustrate what I said above and will, I hope, stir up some members of our profession to a sense of the responsibility resting upon them when they undertake to treat a case of grave infantile diarrhœa.

Ludwig C., eight months old, artificially fed on condensed milk with an admixture of either Mellin's food or malted milk, has had diarrhœa since July 15th. The first two to three days it was, as usual, ascribed to teething—the laity's scapegoat and fountain-head of all infantile troubles—and nothing was done for it. The child becoming very restless and feverish, the discharges becoming more frequent and more offensive in character, and obstinate vomiting having set in, a reputable physician was called in. He prescribed a chalk mixture with bismuth salicylate and opium in it, and ordered liquid peptonoids to be given hourly. The discharges stopped for about a day, but then reappeared with greater severity; at the same time the child's fever rose from 101° F. to 103° F. He then prescribed small doses of antipyrine (one grain and a half every four hours), and in rapid succession powders of bismuth subgallate, bismuth naphthol, tannic acid, and Dover's powder, and lastly the very newest combination—tannalbin. As is seen, the physican was well up in the newer remedies. But the child obstinately refused to testify to the skill of the German chemist, and kept on slowly but steadily getting worse. The discharges became more scanty, but much thinner, sometimes quite black, sometimes so colorless that they would not stain the napkin. The fever rose gradually, in spite of the increased doses of the antipyrine; though not actually comatose, it was all the time drowsy. At last, on July 24th, the child was "given up" by the doctor, who said that nothing more could be done for the child, and that it would die within twenty-four hours. Having treated a child on the same floor with a simple diarrhœa, and the child having recovered in a few days, I was appealed to as a *dernier ressort.*

Status Præsens.—Temperature, 106.6° F.; pulse impossible to count; hands and lower extremities ice cold; rest of body, and especially head, hot; respiration very shallow and feeble. The vomiting had ceased for the last eighteen hours, probably from exhaustion of the nervous centres. Emaciation was not very marked. I introduced a soft tube into the large intestine, and with a bulb syringe proceeded to irrigate. The amount of fæces—black and exceedingly offensive—that came away was simply enormous, the supply seemed inexhaustible; it was a surprise to those standing around, as well as to myself, how such a small abdominal cavity could hold such an immense mass. I had used up over *two gallons* of starch water before the return water came out clear. I then put the child into a hot mustard bath, pouring cold water from a distance of about three feet on his head and forehead (between the eyebrows). The bath lasted six minutes. After taking him out I gave him a good rubbing and injected into the rectum the following mixture, well beaten up: One egg, one tablespoonful of cream, half-teaspoonful of brandy, teaspoonful of beef juice, and a teaspoonful of a mixture containing potassii bromidi, gr. iij; chloral. hydrat., gr. j; antipyrini, gr. j; aquæ menthæ pip., ʒ j.

The buttocks were pressed together for about five minutes; the child was then put to bed with hot-water bottles to his feet and cold-water compresses to his head, and it immediately fell asleep. Within three quarters of an hour the temperature fell from 106.6° to 102.5° F. The child is to-day—a week after having been given up—perfectly well. The rectal alimentation was continued, with slight changes every four hours, for four days, then peptonized milk was carefully tried by mouth. The child retained it well; the temperature never rose above 102.5°, becoming normal on the fourth day.

I report this case somewhat in detail, not because it is unique, but because, on the contrary, it is a typical one illustrating two points: First, the routine way in which some intelligent physicians—and the older members are greater sinners in this respect than the younger ones—will go on treating those cases, locking up the discharges, retaining the toxines in the body, and pitching the poor little sufferers full of drugs and chemicals that can neither be absorbed nor, if absorbed, be of the slightest value; second, it illustrates a method which, in my hands and in the hands of those who have employed it, has proved successful in saving the life of many a poor little sufferer, after all hope had been given up.

Of course, the method has its disadvantages: it takes considerable time, it is disagreeable and troublesome, and if you want good results you must do it all yourself. But has a physician the right to grumble at loss of time and the unpleasant features of a method when the case requires it? Most emphatically, no!

I want to emphasize a few points. Rectal alimentation is borne well by almost all cases, even by infants of a few weeks. When administered after an irrigation and kept in for a few minutes by pressing the buttocks together, it never comes out. In fact, the avidity with which the large intestine absorbs the liquid food is frequently astonishing. I never fail to add the bromide and chloral, as they seem to soothe the irritable intestine; the antipyrine I add only in cases of hyperpyrexia. The liquid beef juice I frequently alternate with other prepared foods, such as liquid peptonoids, panopepton, etc. When there is great emaciation, I order inunctions of cod-liver oil flavored with oil of cinnamon over the entire body. The oil is absorbed very rapidly. In conclusion, I will say that it is my sincere conviction that many lives of children suffering with summer diarrhœas are *needlessly* sacrificed to the routine method of treatment by drugs, and drugs only.

Those who know me as an optimist in therapeutics and as a strong believer in drug-treatment may consider my position in this article somewhat inconsistent; but a strong belief in the power for good which drugs have, when opportunely and intelligently administered, does not by any means militate against using common sense—once in a while.

119 East One Hundred and Twenty-eighth Street.

THE SUCCESSFUL TREATMENT OF
PULMONARY TUBERCULOSIS
BY THE HYPODERMIC USE OF
A COMPOUND SOLUTION OF IODINE.

By CHARLES WILSON INGRAHAM, M. D.,
BINGHAMTON, N. Y.

In iodine we have a powerful antitubercular remedy, though, unfortunately, on account of its tendency to irritate the mucous membranes of the stomach, its continued use can not be tolerated by the average consumptive invalid. It is customary to find the stomach of the pulmonary invalid already weakened by the effect of the tuberculous disease, and when we attempt to administer a remedy which tends to increase the existing irritation, disastrous results must inevitably ensue. Hence, though the effect of iodine might be strongly indicated, the administration of the drug by the stomach is out of the question in nine cases out of ten. Stomach administration being out of the question, we naturally think of the alternative—namely, its hypodermic use.

While the hypodermic use of iodine exerts a powerful control over pulmonary tuberculosis, the therapeutic effect is seriously compromised by the extreme pain attending its hypodermic injection. Indeed, the pain occasioned by the hypodermic injection of ordinary solutions of iodine is such that the majority of invalids refuse to submit to a mode of treatment so severe. Before I abandoned the use of ordinary solutions of iodine by hypodermic injection I became satisfied that the mode of treating tuberculosis was impracticable. However, I became satisfied that iodine was invaluable as a remedial agent in tuberculous diseases, though a practical mode of administration was not apparent.

In 1891 I began a line of experimental work with a view of overcoming the principal objections which then stood in the way of the successful use of iodine. Being specially interested in the treatment of pulmonary diseases, I had an exceptional opportunity of combining my clinical work with my chemical experimental work. My object was to combine with iodine one or more remedial agents of recognized value in tuberculosis, and in this manner secure a remedy which, while it should possess all the properties of iodine, should also possess additional virtues by combining with remedies as valuable as iodine. Inasmuch as the combining properties of iodine are extensive, my experimental work, on account of this chemical affinity, was less complicated. After twelve months of experimental work I succeeded in securing a chemical product which, from a theoretical standpoint, promised much as an antituberculous remedy, and also because of the fact that, as the product contained no free iodine, the typical pain from its hypodermic use was reduced to a minimum.

With this explanation as to my reasons for taking up this line of original investigation I may come at once to the results of my work which have proved so satisfactory.

The formula of my compound solution of iodine was perfected in the latter part of 1892, and now, after five years' use in the treatment of all forms of phthisis, it has proved so thoroughly satisfactory and generally applicable that I have made no alterations or additions to the original formula. I should state that the compound is prepared for hypodermic use only, sterilized oil being the solvent used. Each drachm of the compound represents approximately the following:

Iodine (chemically pure)........	gr. $\frac{1}{2}$;
Bromine (chemically pure)......	gr. $\frac{1}{14}$;
Phosphorus (chemically pure)...	gr. $\frac{1}{100}$;
Thymol (chemically pure)	gr. $\frac{2}{3}$;
Menthol (chemically pure)......	gr. $\frac{2}{3}$.

It must be borne in mind that the compound is not a simple mixture of the ingredients herein mentioned, but that the properly prepared product is the result of a series of definite chemical reactions. The characteristics of the compound are as follows: It is of a bright cherry color, distinctly transparent, and of a slight aromatic odor. It will keep indefinitely without undergoing any change if kept protected from light and heat. Its hypodermic injection is attended with less pain than the injection of a solution of morphine, whereas a hypodermic injection of a solution of the ingredients named in the formula, prepared in common mixture, would be attended with intense pain. Even had this compound not proved to possess remarkable antituberculous properties, the fact that it offers the only mode of administering iodine by hypodermic injection without pain would have given the compound a wide range of usefulness, inasmuch as it revolutionizes the therapeutics of iodine, and gives to this drug a greater value in the field of medicine. The chemical compound can be easily distinguished from a common mixture, which latter is of a dark muddy color, and not transparent. Inasmuch as special chemical apparatus is required to properly prepare the compound, a description of the process of manufacture will be of little or no interest to the general practitioner, and I will pass at once to the most interesting portion of this paper—namely, the therapeutic properties of this compound solution of iodine.

In 1895, after having used the compound nearly three years, I contributed an article to the *American Medico-surgical Bulletin* in which I reported fifty cases of pulmonary and laryngeal tuberculosis treated with this compound of iodine, which I then named bromine-iodine compound, under which name it has since been known. The compound has since been used by physicians in nearly every State of the Union, and so far as I have been able to learn the results have been uniformly successful and entirely satisfactory as an antitubercle remedy.

The effects of bromine-iodine compound in the treatment of pulmonary tuberculosis have been shown remarkably permanent, and no. patient discharged cured has had a relapse; as a number were discharged cured more than four years ago the evidence in proof of the permanent effects of this remedy may be considered as clearly established.

My report in the *Bulletin* two years and a half ago shows nearly ninety per cent. of cures of all cases of pulmonary tuberculosis treated in the first stages of the disease, while the percentage of recoveries in the second stage of the disease was nearly fifty. These percentages were based upon twenty-one cases treated in the first stage and fourteen cases treated in the second stage—a total of thirty-five.

The effects of bromine-iodine compound in tuberculosis are rapidly manifested, and in curable cases the disease is quickly brought under control. A decisive gain in weight is usually manifested during the first ten days of treatment. My records show one case of laryngeal tuberculosis in which a gain of twenty pounds occurred in thirty-four days; another patient gained twenty-five pounds in fifty-six days, while a third invalid gained thirty pounds in four months.

The iodine and bromine contained in this compound act as powerful glandular stimulants and constitutional alteratives. The action of phosphorus is that of a tissue reconstructive aside from its action upon the nervous system. The thymol and menthol contained in the compound act as constitutional antiseptics and apparently exert a decisive control over the development and extension of the local tuberculous processes; no doubt, also, these antiseptics limit the amount of toxic elements generated by the action of the tubercle bacilli. The menthol contained in bromine-iodine compound is given off through the lungs, and patients notice the odor of peppermint almost immediately after the administration of the injection. The lungs are kept constantly bathed in the exhalation of menthol, and, as has recently been shown, the use of peppermint by inhalation is of great value in the treatment of tuberculosis. The constant exhalation of the menthol contained in the blood must be far more penetrating and effective than inhalations, as the former would keep the lungs constantly saturated with the medicinal vapors.

As I have stated, bromine-iodine compound is prepared for hypodermic use only, and the injection is attended with practically no pain. Its absorption into the general circulation takes place rapidly, in proof of which, as well as the fact that the treatments are accompanied with no local irritation, I have given twelve daily hypodermic injections of one drachm each in the arm, in a space no larger than a silver dollar, without causing swelling or more than a trifling soreness.

There are few cases which do not yield at once to the effects of bromine-iodine compound systematically administered, and I have been surprised to note how generally applicable the remedy has proved to be, and how rapidly recovery takes place in the early stages of the pulmonary or laryngeal tuberculosis. Expectoration at first becomes more free and profuse, though it soon decreases in amount, becomes less purulent in character, while the cough is generally relieved from the first. The oil which is used as a solvent in preparing the chemical compound for hypodermic use doubtless exercises a distinct effect upon the pulmonary air-passages, promoting expectoration and reducing local inflammation. The oil, too, doubtless contributes to the increase in general nutrition.

There is no necessity of administering other remedies than those designed to increase general nutrition —such remedies as come under the head of nutritive preparations—while administering bromine-iodine compound. This is of no small importance, for, as a result, the stomach and digestive organs are relieved of the strain of digesting and assimilating the numerous remedies and compounds which are ordinarily administered by the stomach, and which only too frequently defeat the object of the physician by inducing serious local disturbances, destroying the appetite, and interfering with general nutrition. By the use of bromine-iodine compound the digestive and assimilative organs are left to perform their natural functions. The appetite is increased rather than diminished, and the increased amount of food taken cooperates with the effects of the compound in increasing general nutrition, which is so important a factor in effecting recovery from pulmonary tuberculosis. Another advantage from the use of bromine-iodine compound is the fact that a definite amount of curative agents are regularly introduced into the general system each day, and the uncertainty which attends the ordinary treatment of chronic disease, from irregularity on the part of the patient in taking remedies, as well as all doubts as to whether the remedy has been assimilated, are eliminated in the systematic hypodermic treatment.

I will report one case of recovery from pulmonary tuberculosis, which will illustrate the promptness and thoroughness with which bromine-iodine compound acts.

Mr. L. V. D., aged about thirty years; occupation, mechanic. In 1893, following an acute inflammation of the lungs, he developed a cough, followed by profuse purulent expectoration, night sweats, loss of flesh and strength, together with the full array of typical manifestations of progressive pulmonary consumption. Failing to secure for him the desired relief, and aware that the case was beyond the control of ordinary treatment, the family physician recommended him to my care for the bromine-iodine treatment. He finally became confined to his bed, and the bromine-iodine compound treatment was begun in August, 1894. At that time emaciation was extreme. Patient was extremely weak. Temperature ranged as high as 102.5° F., and on the whole the case was one of extreme severity and the prognosis decidedly unfavorable. To the surprise of all, however, at the end of one month there was a decided change for the better. The night sweating had ceased. Patient was decidedly stronger. The progressive waste had ceased, and a gain in weight was apparent. After ten weeks of treatment patient was out of doors. Cough was scarcely noticeable. There was a gain of about twenty pounds in weight. All active symptoms of phthisis had disappeared. The treatment was continued four months, at the end of which time the patient had gained thirty pounds and recovery was complete in every respect. The tubercle bacilli, which were present in abundance, gradually disappeared, and the consolidated portion of the left lung cleared up entirely, the respiratory murmur being clear and normal over the formerly diseased areas.

The best indication that recovery was complete is the fact that though two years and a half have elapsed since the patient was discharged cured there have been no indications of relapse, although he has followed outdoor occupations which have exposed him to all conditions of severe weather. He is capable of performing as much work as ever, and apparently the disease not only has been permanently cured, but the tendency to its redevelopment has been overcome.

I might report many similar recoveries, but such reports would be tedious and uninteresting reading, while for all practical purposes the report of this one case illustrates the action of bromine-iodine compound.

I have administered more than ten thousand injections of bromine-iodine compound, and except in two instances in the early part of my experience I have never seen an abscess develop, and in these instances suppuration occurred as a result of carelessness in my care of the syringe, and not from the compound, which, when properly prepared, is not only aseptic, but slightly antiseptic.

The most delicate invalids do not complain of the pain from the administration of the injections, and I have never yet seen an invalid who could not easily bear the treatment.

In conclusion, I earnestly commend the use of bromine-iodine compound as one of the most valuable, if not the most generally useful, of remedies for the alleviation and cure of tuberculosis in all its varied manifestations. There is no reason why it should not prove equally valuable in the treatment of malignant disease, though I have had no clinical experience with it in the treatment of cancerous affections. I believe, also, on account of its powerful alterative qualities it will be found eminently useful in the treatment of syphilitic disease.

Bromine-iodine compound may be used as successfully by the general practitioner as by the specialist, and there is no doubt that its timely use is capable of saving life and suffering when less powerful remedies would fail to control the disease.

Therapeutical Notes.

Balsamics in the Treatment of Bronchiectasis in Children.—Molle d'Aubernas (*Loire médicale; Therapeutische Wochenschrift*, September 19th) recommends the following:

℞ Eucalyptol	10 parts;
Creosote	25 "
Tincture of benzoin	50 "
Balsam of copaiba	80 "
Oil of sweet almonds	200 "

M. To begin with, an enema of thirty drops of this mixture, in a little milk, may be given, and the dose may be increased gradually to two teaspoonfuls. In a few days the patient gets used to the burning sensation that follows the injection.

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GELATIN AS A HÆMOSTATIC.

The carpenter's time-honored recourse to the glue-pot in case of cut fingers and the like has lately received scientific justification at the hands of Dr. Paul Carnot, an interne of the Paris hospitals, who treats of gelatin as a hæmostatic in the *Presse médicale* for September 18th. He divides hæmostatics into two great groups—those that, like ergotine, constrict the vessels and retract them, leaving to spontaneous coagulation the work of obliterating the openings, and those that, applied locally, hasten coagulation, such as perchloride of iron, the salts of calcium, gelatin, gelose, etc.

There are several objections, he thinks, to the vaso-constrictor hæmostatics, such as ergotine, pyoctanin, and extract of suprarenal capsules. In the first place, most of them are very poisonous. In the next place, when coagulation takes place in a retracted vessel, the clot is strained and apt to be torn on the return of the vessel to its normal calibre, thus occasioning a recurrence of bleeding. Moreover, the arterial pressure is augmented, and that is an unfavorable condition if many vessels are involved. Finally, general vaso-constriction facilitates infection in an organism weakened by hæmorrhage. With regard to this point, he cites Bouchard and Charrin as having shown that vaso-constriction is a weapon in the hands of micro-organisms at the time of their implantation, and that the system reacts by setting up vaso-dilatation, which favors diapedesis and the diffusion of defensive juices. Recent experiments, he adds, have shown that at the beginning of an infection it is of great importance to effect vascular dilatation; if rabbits infected with a fatal dose of such cultures as that of Eberth's bacillus, for example, are made to inhale amyl nitrite at once, they survive, whereas the test animals perish in a few days. For these reasons, M. Carnot thinks, the use of vaso-constrictors should be restricted to cases in which the hæmorrhage is insusceptible of topical treatment.

The hæmostatics of the second group, on the other hand, the coagulants, he says, do but exaggerate the natural hæmostatic process. The coagulation of blood outside the vessels plugs them efficiently in the majority of cases, but it fails if the wound is too large or if the blood is so altered that its coagulability is impaired, as in animals poisoned with peptones or leech extract and in cases of hæmophilia. The author adds the interesting observation that he has seen two dogs under the influence of peptones die of intestinal hæmorrhage caused by ascarides. But there are grave objections to most of the coagulants that are in common use, says M. Carnot, especially to perchloride of iron. A few of them, however, are well-nigh harmless; they are the salts of calcium, especially the chloride, and gelatin and gelose.

It seems that the coagulant property of gelatin was discovered by Dastre and Floresco, whose report of experiments was made to the Society of Biology in February of last year and published in the *Archives de physiologie* for April, 1896. They were properly careful to distinguish between coagulation and gelatinization, and they found that an amount of gelatin that was too small to cause gelatinization augmented the coagulability of the blood. But M. Carnot thinks that both properties, the coagulating and the gelatinizing, are of value in bringing about hæmostasis, and it is their association in gelatin that makes him prefer that substance to calcium chloride. Since gelose gelatinizes at a temperature higher than that of the human body, he adds, it is still more useful. Experiments have shown him also that both gelatin and gelose play the part of nutrients in a wound and hasten its healing.

M. Carnot states that he has used gelatin both as a local hæmostatic and to modify the coagulability of the blood as a whole. As a local hæmostatic, he employs a solution of gelatin in water or, better, in the physiological (seven to a thousand) solution of sodium chloride. This is sterilized by keeping it at the boiling point of water for fifteen minutes at a time on two occasions, two days apart. The temperature should not be raised to 239° F., for that sometimes destroys its gelatinizing property. The strength of the solution varies according to the end in view; generally it is from five to ten per cent. An antiseptic may be added without impairing the coagulating and gelatinizing properties of the solution, but it is only in special cases that he does it, for one of the advantages of gelatin is its harmlessness.

It was in comparatively simple cases that M. Carnot first tried gelatin, such as those of rebellious epistaxis in children affected with hæmophilia. In one such case the child was almost bloodless, having several attacks of nosebleed daily. Antipyrine, perchloride of iron, and other applications had been used without success. The nostril from which the blood proceeded was injected with thirty or forty cubic centimetres of a five-per-cent. solution of gelatin, and a tampon wet with the same solution was left on its orifice. The hæmorrhage stopped at once. On the following day bleeding took place from the other nostril, and it was stopped in the same way. There was no more epistaxis, but the child had in succession purpuric, intestinal, pericardial, and other hæmorrhages, and at the time of its death it had only 365,000 red corpuscles left [to the cubic millimetre of blood, we presume]. The treatment, then, was efficient locally, says M. Carnot, in spite of the great alteration of the blood.

M. Carnot recommends that the solution be not used too hot, partly because gelatinization would thereby be retarded, and partly because the gelatin acts only by contact with the blood; the energetic vascular constriction produced by the heat would arrest the hæmorrhage for an instant, but, blood and gelatin being no longer in immediate contact, no plugging clot would be produced. It is better, he says, to use a solution of about the temperature of the body. The mode of application is the same for any hæmorrhage from a cavity readily accessible. For cutaneous wounds, and particularly for those of the fingers and hands, M. Carnot has frequently used solutions of gelatin. He simply moistens the wound with a few drops of the sterilized solution, and leaves on it for a few minutes a pledget impregnated with the same solution. Hæmorrhages from ruptured varices and those from the rectum are amenable to the same treatment, but hæmorrhages from the stomach are not, for the gastric juice at once transforms the gelatin.

In cases of uterine hæmorrhage, says M. Carnot, the application is a little more complicated, for the necessity of direct contact between the gelatin and the bleeding vessels requires the injection to be intra-uterine; hence it should be done with all known precautions, and especially with sterilized solutions and aseptic instruments. The author has thus far employed the treatment in only one case of metrorrhagia, due to a fibroma, and in that he was perfectly successful. He has often used gelatin water in place of hæmostatic forceps, and has found it sufficient to hold tampons wet with the solution against the bleeding points for a few seconds.

Incidentally, M. Carnot relates an interesting case of the successful replacement of a severed part. A young workman had the last joint of one of his fingers detached by a clean cut. About half an hour after the accident the author saw him at the Hôtel-Dieu. The young man had the end of his finger in his pocket, carefully done up in paper. The wound was bleeding very freely. The bleeding was arrested immediately by the application of a solution of gelatin stronger than that usually employed. M. Carnot then applied the detached portion of the finger, and kept it in place by wrapping the whole digit with iodoform gauze and then with strips of sticking-plaster. The man came back at the end of two days, when the severed joint was neither decomposed nor desiccated. Very curiously, says the author, the patient could feel quite a slight pressure on the end of the finger, but it had no sensibility to heat or to pain; perhaps, he adds, the sensation felt was only transmitted to the line of section. The "graft" was finally successful.

It is only on the lower animals that M. Carnot has tried gelatin in the more difficult problems of hæmostasis. In experimental resections of very considerable portions of the liver, he says, he soon renounced all sorts of ligation, and now contents himself with a few seconds' contact of the gelatin solution with the bleeding surface, even taking pains not to make any pressure in applying it. As soon as a clot has formed and the surface ceases to bleed, the liver is replaced in the abdomen; generally a few cubic centimetres of the gelatin solution are poured into the peritonæum before the abdomen is closed, to guard against the danger of recurrent hæmorrhage, and he has never known death from bleeding to follow.

M. Carnot speculates about the use of gelatin in the case of a large wounded artery. After division of the carotid, he says, it would evidently have small chance of proving efficient; nevertheless, he adds, combining it with clamping of the vessel for a few minutes would perhaps give the clot time to adhere solidly enough to resist the arterial pressure, and thus do away with the necessity of leaving in the wound threads difficult of absorption.

As regards the use of gelatin for the purpose of enhancing the coagulability of the blood in its totality, M. Carnot can speak only with great reserve. Intravenous injections of gelatin in the human subject he thinks unwarranted, owing to the danger of producing massive clots. In several instances, however, he has injected gelatin subcutaneously and into the rectum with success. In a "bleeder," the spontaneous hæmorrhages were thus made to cease; in another case purpura was caused to disappear rapidly. But the author says that he has been too much restrained by fear of rendering the coagulability of the blood too great to generalize concerning these results.

THE TREATMENT OF WHOOPING-COUGH.

A WELL-KNOWN writer on the subject of whooping-cough, Dr. F. Theodor, of Königsberg (*Archiv für*

Kinderheilkunde, xxiii, 4–5), takes rather a gloomy view of the chance of our accomplishing more in the treatment of whooping-cough than palliation; but we think that most practitioners of experience will be disposed to agree with him. One after another, he has tried the vaunted specifics, but in vain. He speaks particularly of the vaccination treatment. It is an old notion, and one apparently well founded, that the vaccination of a child tends to protect it for a time against the infection of whooping-cough. Doubtless the step from this idea to that of treating the disease, after it has manifested itself, by means of vaccination was long ago taken. At all events, vaccination as a remedy for whooping-cough has lately been brought forward by Pestalozza, whose reports of brilliant results have been followed by equally favorable reports from a number of other observers. But Theodor says that he has not been so fortunate with this treatment. He has tried it in ten cases, and without the slightest result in any of them. He gives brief notes of the cases of four children who had not before been vaccinated—in whom, therefore, he remarks, the most striking results ought to have been witnessed. The pocks formed regularly and underwent gradual desiccation, but the whooping-cough was not in the least affected.

One of these four children, a boy three years old, was vaccinated at the end of a week after his coming under the author's care for whooping-cough. Six insertions were made on the left arm. In eight days there were four pocks and the vaccinal fever had made its appearance, but the child's condition was unchanged. Four weeks later the paroxysms began to grow fewer and gradually ceased. The second child was a very weakly one, two years old, whose vaccination had been deferred on account of previous disease. It was taken with whooping-cough on the 1st of November, 1895, and had epistaxis and vomiting of blood. On the 10th of the month the child was vaccinated successfully by the author. The whooping-cough, which was very severe and gave rise to facial paralysis, was still in full blast on the 10th of the following month, and it was only slowly that the child recovered. The third child, two years old, had been under treatment for whooping-cough for four days when it was vaccinated. On the fifth day after the vaccination the formation of the pocks was discernible, but on that day the child died in convulsions. The fourth child, nine months old, had whooping-cough with vomiting and convulsions. It was vaccinated successfully, but there was no mitigation of the whooping-cough until after about six weeks, and it was eight or ten weeks before recovery was complete.

The author says that since these experiences occurred he has gone back to his old way of treating whooping-cough. For children under a year old he employs antipyrine, for those between a year and two years old he uses bromoform, and for older children he prescribes the wearing of a mask wet with a ten- or twenty-per-cent. solution of carbolic acid. Perhaps, he says, these measures lessen the number of the paroxysms, but assuredly they do not shorten the course of the disease. Hygiene, he thinks, should take the first place, and possibly the only one, in the treatment of whooping-cough. So long as there is any catarrh, he would not allow the child to go out of doors unless the weather was so fine that it was warmer and pleasanter in the open air than in the house. With all this, he attaches great importance to pure air in the rooms and to a warm liquid diet.

MINOR PARAGRAPHS.

FEVER AND HYPERTHERMIA.

BEFORE the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chirurgie*, September 2, 1897), Dr. G. B. Ughetti, of Catania, maintained that the hyperthermia of fever was due to the presence of corpuscular foreign bodies in the blood. A distinction should be made, he said, between fever and hyperthermia, but almost always hyperthermia was one of the symptoms of fever. According to some theorists, the fevers properly so called were infectious toxæmias due to a poison which should be called pyrotoxine, but always, in the author's opinion, fever was caused rather by the presence of microbes in the blood, acting as foreign bodies, than by the secretion of a pyrogenic toxine. Experience, he said, proved that the constant result of all poisoning was a subnormal temperature. If poisonous chemicals were injected into an animal, the temperature was always lowered; if, on the other hand, substances perfectly harmless of themselves, such as a saline solution, were injected, they might lead to a dissolution of the surrounding tissues, producing a certain amount of detritus the particles of which would act as foreign bodies and cause a rise of temperature.

PUERPERAL NEURITIS.

DR. GEORG KÖSTER (*Münchener medicinische Wochenschrift*, 1896, No. 28; *Fortschritte der Medicin*, September 1, 1897) relates the case of a woman who, on the fourteenth day after a normal confinement, the puerperium being perfectly natural, rather suddenly felt a weakness of her left arm. On examination, it was found that the upper arm was diminished in size, with lowered power and sensation in the radial and musculo-cutaneous nerves, sensory disturbances in the areas of distribution of the axillary and lateral cutaneous nerves, and the reaction of degeneration in the deltoid and biceps muscles. The symptoms gradually increased in intensity, and finally the brachialis internus was affected. In the course of eight months the reaction of degeneration was observed in all the muscles mentioned.

SMALL MEDICINAL ENEMATA.

Montennis and Ollivier (*Journal de médecine et de chirurgie pratiques,* November 25, 1896; *Centralblatt für innere Medicin,* September 4, 1897) call attention to the usefulness of small clysters as a means of administering ill-tasting medicines. Montennis remarks that a solution of neutral quinine hydrochloride that is readily borne subcutaneously is apt to cause tenesmus if given by the rectum; hence, he says, weaker solutions must be used. He gives the antidiphtheritic serum by the rectum, and states that it is perfectly efficient when thus administered. Ollivier uses enemata of such drugs as creosote, ichthyol, caffeine, and quinine in practice among children.

THE *CANADIAN JOURNAL OF MEDICINE AND SURGERY.*

The September number of this excellent journal contains much matter of great interest to the profession, including Dr. W. Mitchell Banks's Address in Surgery at the Montreal meeting of the British Medical Association, which is embellished with a portrait of Lord Lister. Other portraits in the number are those of Dr. T. G. Roddick, Dr. Henry Barnes, Dr. Robert Saundby, and Sir William Hingston, and there are numerous cuts of various Canadian hospitals and other medical institutions.

THE TREATMENT OF WHOOPING-COUGH WITH THE SERUM OF VACCINATED HEIFERS.

Dr. Violi, of Constantinople, reported before the Section in Medicine of the Twelfth International Medical Congress (*Gazette hebdomadaire de médecine et de chirurgie,* September 23d) that he had used the serum of heifers that had been vaccinated in seventy-five places, taken at the time of the desiccation of the pocks, upon seventy-eight children with whooping-cough, from the twelfth to the twenty-eighth day of the disease. In all but four of them the attacks diminished, and in many of them they ceased in from eight to ten hours. The serum was administered subcutaneously; the amount used is not stated.

INFLAMMATION OF THE SCIATIC NERVE DUE TO ITS ACCIDENTAL STRETCHING.

Lapeyre (*Gazette médicale du Centre,* December, 1896; *Gazette médicale de Nantes,* September 11, 1897) states that sudden stretching of the sciatic nerve, such as may be produced by a fall with the thigh flexed and the leg extended, may, without any contusion of the hip, give rise to neuritis, and it may come on very speedily, in the course of thirty-six hours after the injury. The symptoms are entirely sensory and trophic, not at all motor. The prognosis, as regards the restoration of the functional activity of the limb, is doubtful.

SISYMBRIUM OFFICINALE IN THE TREATMENT OF LARYNGITIS.

This plant, also known as *Erysimum officinale,* was formerly official, and was reputed diuretic and expectorant. Its employment in laryngitis, particularly in the hoarseness and aphonia of singers, has lately been revived by Hermary (*Médecine moderne,* 1897, No. 46; *Therapeutische Wochenschrift,* September 19, 1897), who reports that its favorable action is extraordinarily rapid. An infusion of one part of the leaves, sweetened with two parts of a syrup of the same plant, is the form employed. It is not clear from the *Wochenschrift's* abstract what the dose is.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 19, 1897:

DISEASES.	Week ending Oct. 12.		Week ending Oct. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	43	4	47	8
Scarlet fever	118	4	100	7
Cerebro-spinal meningitis	0	0	0	0
Measles	69	4	97	2
Diphtheria	153	26	125	17
Croup	8	3	2	2
Tuberculosis	203	105	235	102

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending October 16, 1897:

Yellow Fever—United States.

Bayminette, Ala	Oct. 14	1 case,	1 death.
Flomaton, Ala	Oct. 14	4 cases.	
Wagar, Ala	Oct. 11	1 case.	
Mobile, Ala	Oct. 1–15	77 cases,	9 deaths.
Atlanta, Ga	Oct. 8	1 case.	
New Orleans, La	Oct. 1–15	546 cases,	56 “
Franklin, La	Oct. 14	1 case,	1 death.
Biloxi, Miss	Oct. 1–15	208 cases,	7 deaths.
Clinton, Miss	Oct. 9–14	2 “	1 death.
Edwards, Miss	Oct. 1–15	179 “	16 deaths.
McHenry, Miss	Oct. 1–15	20 “	1 death.
Nitta Yuma, Miss	Oct. 11, 12		1 “
Pascagoula, Miss	Oct. 14	2 “	
Scranton, Miss	Oct. 1–15	122 “	4 deaths.
Galveston, Texas	Oct. 9–12	12 “	
Houston, Texas	Oct. 11	3 “	

Yellow Fever—Foreign.

Para, Brazil	Sept. 18–25		5 deaths.
Rio de Janeiro, Brazil	Aug. 28–Sept. 11	1 case,	1 death.
Cardenas, Cuba	Sept. 25–Oct. 2		1 “
Cienfuegos, Cuba	Sept 26–Oct. 3		2 deaths.
Sagua la Grande, Cuba	Sept. 18–Oct. 2	75 cases,	6 “
Kingston, Jamaica	Sept. 18–25	4 “	2 “
Vera Cruz, Mexico	Oct. 1–7	3 “	
Panama, U. S. of Colombia	Sept. 23–Oct. 3	1 case,	1 death.

Cholera—Foreign.

Bombay, India	Sept. 7–14		41 deaths.
Calcutta, India	Aug 28–Sept. 4		6 “
Madras, India	Sept. 3–10		8 “

Plague—Foreign.

Bombay, India	Sept. 7–14		27 deaths.

Small-pox—United States.

Birmingham, Ala	Oct. 2–9	4 cases (3 varioloid).	

Small-pox—Foreign.

Manaos, Brazil	Sept. 11–25	65 cases,	7 deaths.
Rio de Janeiro, Brazil	Aug. 28-Sept. 11	11 “	
Hong Kong, China	Aug. 21–28		1 death.
Sagua la Grande, Cuba	Sept. 18–Oct. 2	40 “	2 deaths.
Calcutta, India	Aug. 28–Sept. 4		1 death.
Madrid, Spain	Sept. 14–28		7 deaths.
Moscow, Russia	Sept. 11–18	1 case.	
Odessa, Russia	Sept. 18–25	1 “	
St. Petersburg, Russia	Sept. 11–25	12 cases,	3 “
Warsaw, Russia	Sept. 18–25		6 “

The Late Dr. Bratton, of the Marine-Hospital Service.—Surgeon-General Wyman has issued the following circular, dated October 12th, announcing the death of Passed Assistant Surgeon William D. Bratton:

To the Medical Officers of the U. S. Marine-Hospital Service:

I have the painful duty of announcing to the officers of the service the sudden death of Passed Assistant Surgeon William D. Bratton, which occurred at Sabine Pass, Texas, on the 2d inst., under peculiarly distressing circumstances.

In the pressing need of medical officers for active work during the present yellow-fever epidemic in the South, Passed Assistant Surgeon Bratton, though an invalid, and therefore on waiting orders, promptly volunteered his services to meet the emergency, and the tender was accepted in the spirit it which it was made. He was ordered to Sabine Pass to assume charge of service matters relating to the quarantine service at that port, where he arrived and reported himself on duty the 28th ult. On the 1st inst. he had been superintending the disinfection of a vessel and, returning to the ship to reassure himself upon the work done, he fell through a ventilating hole, striking his head on an iron knee, producing concussion of the brain. He remained undiscovered for several hours, and when found was unconscious and remained so until death occurred, eighteen hours after the unfortunate accident.

William Du Bose Bratton was born in Fairfield County, South Carolina, June 23, 1860, the son of General John Bratton of Winnsboro, in that State. His early education was acquired in Mt. Zion School, Winnsboro, and at Abbeville, South Carolina. In 1874 he was matriculated at the Carolina Military Institute at Charlotte, North Carolina, remaining two years, and then entered the University of the South at Sewanee, Tennessee, where he received the degree of B. S., in 1880, after a three years' course. He at once began the study of medicine and was graduated at the Medical College of South Carolina, March 1, 1884, and for the year following was house surgeon at the Charleston City Hospital.

He was commissioned as assistant surgeon April 1, 1885, and assigned to duty at New York. His subsequent stations while in that grade were San Francisco, as medical officer of the revenue cutter *Corwin* for service in Alaskan waters, and then for temporary duty at Port Townsend, Washington. He was commissioned a passed assistant surgeon April 2, 1888, and again assigned to duty as medical officer on the revenue cutter *Bear*, for service in Alaskan waters. In May, 1889, he was ordered to duty in command of the service at Portland, Oregon, where he remained two years, and was then assigned to duty at Chicago. In 1893 he was placed in command of the service at Buffalo, where he remained till January 9, 1894.

In the fall of 1893 he first became aware of a condition of his health which gradually disclosed a tuberculous character, and after the Bureau had been officially informed of it, he was sent to Wilmington, North Carolina, for its favorable climate, where he remained several months, doing meanwhile temporary service at Delaware Breakwater Quarantine, but later he was placed on waiting orders (January 1, 1895), taking up his residence in Arizona and finally at Albuquerque, New Mexico, to obtain the advantages of the southwestern arid region. After a two years' residence there he reported, in March, 1897, his gradual return to a state of health which justified him in asking for an early restoration to active duty; but further delay was advised in order that he might have the benefit of a longer residence and, if possible, a permanent cure.

Passed Assistant Surgeon Bratton, during the period of waiting orders, became much interested in the climatic treatment of consumptives, and wrote several reports on the arid region of the Southwest as the best locality for such work, recommending the establishment of a sanitarium in that section for the treatment of patients of this service suffering from the disease

His literary and scientific attainments were of a high order, and his studious habits and keen faculties enabled him to maintain in the service a reputation for unusual professional knowledge and skill in practice. Officially, devotion to duty was always a paramount consideration with him, and his conscientiousness in respect thereto was a marked characteristic of his work.

Personally, he was of modest and reserved manner, yet frank and manly in his demeanor, and actuated by a high sense of honor in all relations with his associates. He was in every respect a noble officer.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 27th inst., the following papers are to be read: Some Observations on Nasal Polypi, by Dr. H. L. Swaine, of New Haven; Reminiscences of the International Medical Congress at Moscow, by Dr. Joseph W. Gleitsmann; and Sketches from the Meeting of the British Medical Association at Montreal, by Dr. D. Bryson Delavan. Cases will be presented and specimens and new instruments will be exhibited.

At the last meeting of the Section in General Medicine, on Tuesday evening, the 19th inst., Dr. William Osler, of Baltimore, was to read a paper on Internal Medicine as a Vocation, which was to be discussed by Dr. William M. Polk, Dr. Andrew H. Smith, Dr. Joseph D. Bryant, and others.

The Alvarenga Prize of the College of Physicians of Philadelphia.—It is announced that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1898, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but can not have been published, and must be received by the secretary of the college, Dr. Thomas R. Neilson, on or before May 1, 1898. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga prize for 1897 has been awarded to Dr. Joseph Collins, of New York, for his essay entitled Aphasia.

Changes of Address.—Dr. Follen Cabot, Jr., to No. 128 East Thirty-eighth Street, New York; Dr. J. D. Johnson, to No. 130 West One-hundred-and-fourth Street, New York; Dr. W. A. Walker, to No. 151 West Ninety-third Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 10 to October 16, 1897:*

Heyl, Ashton B., Captain and Assistant Surgeon. The leave of absence granted him is extended two months.

Purviance, W. E., Captain and Assistant Surgeon, is granted leave of absence for one month.

Wilson, James S, First Lieutenant and Assistant Surgeon, is granted leave of absence for one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending October 16, 1897:*

Bagg, C. P., Passed Assistant Surgeon. Detached from the United States Steamer Marion and ordered to the United States Steamer Adams.

Biddle, C., Surgeon. Detached from the Marine Rendezvous, San Francisco, ordered to Washington in charge of patient, then to report at the Navy Department.

Farenholt, A., Assistant Surgeon. Detached from the United States Steamer Vermont and ordered to the New York Navy Yard.

Grove, W. B., Assistant Surgeon. Detached from the Naval Laboratory, New York, and ordered to Mare Island Hospital.

Herndon, C. G., Surgeon. Ordered on temporary duty at the Naval Museum of Hygiene.

Johnson, M. K., Assistant Surgeon. Detached from the United States Steamer New York and ordered to duty with the United States Steamer Vicksburg.

Spear, R., Assistant Surgeon. Detached from the Naval Laboratory, New York, and ordered to the United States Steamer New York.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Two Weeks ending October 9, 1897.*

KALLOCH, P. C., Surgeon. To proceed to McComb, Miss., for special duty. October 2, 1897.

WASDIN, EUGENE, Passed Assistant Surgeon. Relieved from duty at Ocean Springs, Miss., and directed to proceed to New Orleans, La., and report to Surgeon H. R. CARTER for duty. October 4, 1897.

MAGRUDER, G. M., Passed Assistant Surgeon. To proceed to Sabine Pass, Texas, for special duty. October 3, 1897. To proceed to Houston, Texas, and await orders. October 9, 1897.

COBB, J. O., Passed Assistant Surgeon. Relieved from duty at Cairo, Ill., and directed to proceed to Jackson, Miss., September 27, 1897. To proceed to Fontainebleau, Miss., for duty. October 9, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. To proceed to New Orleans, La., and report to Surgeon H. R. CARTER for duty. September 27, 1897.

CLARK, TALIAFERO, Assistant Surgeon. To proceed to Cairo, Ill., for temporary duty. October 2, 1897. Granted leave of absence for two days. October 6, 1897.

Promotion.

Passed Assistant Surgeon PARKER C. KALLOCH commissioned as Surgeon. September 22, 1897.

Casualty.

Passed Assistant Surgeon W. D. BRATTON died at Sabine Pass, Texas, October 2, 1897, of injuries contracted in line of duty.

Society Meetings for the Coming Week:

MONDAY, *October 25th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *October 26th:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Putnam, N. Y. (semiannual); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *October 27th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *October 28th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Massachusetts Medical Benevolent Society (annual); Pathological Society of Philadelphia.

OBITUARY NOTES.

Surgeon-General Bates, of the Navy.—Dr. Newton L. Bates, surgeon-general of the navy, died in Washington on Monday, October 18th. Dr. Bates entered the medical corps of the navy in 1861, and saw much of active service in the war of the Rebellion. Of late years he had been on duty in the Naval Museum of Hygiene in Washington. He was appointed surgeon general only about a fortnight before his death. He was President McKinley's family physician.

Births, Marriages, and Deaths.

Born.

DOUGLAS.—In New York, on Saturday, October 16th, to Dr. and Mrs. S. D. Douglas, a daughter.

Died.

BATES.—In Washington, on Monday, October 18th, Surgeon General Newton L. Bates, United States Navy.

BUCHANAN.—In Troy, N. Y., on Friday, October 8th, Archibald Seymour Buchanan, infant son of Dr. Archibald Buchanan.

CONNOR.—In Springwater, N. Y., on Friday, October 8th, Dr. Timothy D. Connor, in the sixty-fifth year of his age.

Book Notices.

A Clinical, Pathological, and Experimental Study of Fracture of the Lower End of the Radius, with Displacement of the Carpal Fragment toward the Flexor or Anterior Surface of the Wrist. By JOHN B. ROBERTS, A. M., M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. With Thirty-three Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. 5 to 76. [Price, $1.]

IN this interesting essay Dr. Roberts gives the results of an extended "clinical, pathological, and experimental study of fracture of the lower end of the radius, with displacement of the carpal fragment toward the flexor or anterior surface of the wrist."

The investigations which were undertaken by the author with a view to acquiring the data upon which this work is based have been carried out in a most thorough and scientific manner.

This variety of fracture is shown to be of far more frequent occurrence than is generally supposed, as the author has collected no fewer than twenty-four well-authenticated cases, and gives descriptions of some thirty-one museum specimens.

Considerable attention is devoted to the question of ætiology, and the details of a number of interesting experiments on the cadaver are given. Valuable suggestions regarding diagnosis and treatment render the book of practical value to those interested in the subject of traumatic surgery.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by JUDSON DALAND, M. D., Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. MITCHELL BRUCE, M. D., F. R. C. P., London, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and DAVID W. FINLAY, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume I. Seventh Series, 1897. Philadelphia: J. B. Lippincott Company, 1897. Pp. xii–1 to 361.

A WIDE range of subjects is included in this quarterly for April of the present year. They are divided into treatment, medicine, neurology, surgery, gynæcology and obstetrics, ophthalmology, laryngology, and dermatology. The list of authors is chiefly English and

American, with a predominance of the latter, and we search in vain for the name of any well-known New York writer. They are almost exclusively Philadelphian. Continental clinics are singly represented in a paper on The Hypodermic Treatment of Syphilis, by Fournier, a very short and sketchy treatise by this celebrated syphilographer. The reader might wish for a fuller account of this method of treatment, a comparison of it with the older and more tried methods, and the author's opinion as to its final results.

A number of hard and fast rules governing the treatment of inflammation of the vermiform appendix are laid down in a clinical lecture by Dr. William White, of Philadelphia. We quote the following: "When the attack has come on with great suddenness, the tenderness over the appendix is extreme, the abdominal pain is severe, and the rigidity of the rectus is marked, immediate operation is clearly indicated." This certainly, in this class of cases, simplifies the vexing question of operative or non-operative procedure. There are, however, plenty of surgeons, more numerous now than formerly, who do not go to the extreme of advising an immediate operation in all cases of this kind. The author also believes that "if at the end of thirty-six to forty-eight hours the symptoms, even in a mild case, are not distinctly relieved, or if they are growing worse, and especially if tenderness, pain, and muscular rigidity continue and coexist with a tendency to abdominal distention, operation should be resorted to without further delay. The presence of a normal temperature, or of one of only 99.5° or 100° F., does not affect the rule."

Some very practical hints in the after-treatment of abdominal section appear in a lecture by Dr. J. M. Baldy, of Philadelphia. The routine use of the catheter eight or twelve hours after the operation is censured; also the absurdity of giving drugs to relieve nausea, of giving water and ice to relieve thirst, and in fact of allowing anything to enter the stomach before twenty-four hours after the operation. The author of a paper on hæmoptysis is of the opinion that this occurrence is more commonly due to a lesion in the pulmonary than to one in the bronchial vessels. He quotes, however, from Laennec to the effect that in the greater number of cases of slight or moderate hæmoptysis there is a simple exhalation of blood from the bronchial membrane, while the severe cases originate chiefly in the vascular structure of the lungs, and constitute the affection otherwise known as pulmonary apoplexy.

In an admirable paper on fractures Mr. A. Pearce Gould emphasizes the importance of anæsthesia in diagnosis, and of the aid which we are led to expect from the use of the Röntgen rays. In a lecture on movable kidney the author overlooks, or at least does not mention, the frequency with which this condition is associated with displacement of other abdominal organs. The section on dermatology treats of two interesting cases of macular leprosy and of tinea circinata.

Traitement de la blennorrhagie chez l'homme et chez la femme. Par E. Delefosse, Docteur en médecine, etc. Paris: Librairie Coccoz, 1897. Pp. ix–261.

This monograph is devoted almost exclusively to the treatment of gonorrhœa. The author emphasizes at the start the necessity of distinguishing between a simple urethritis and a urethritis produced by the gonococcus, and throughout the book we find the treatment that is advised influenced by the result of bacteriological examination of the discharge.

In the first stage of an acute gonorrhœa, the *période de début*, the writer speaks highly of the abortive treatment if the case is seen during the first three or four days, and preferably by irrigation with a weak solution of permanganate of potassium rather than by injections and instillations. The treatment recommended for the second stage, the *période d'état*, is largely antiphlogistic. In the treatment of the third stage, the *période de déclin*, a large number of drugs are considered and their merits compared. The author obtains more favorable results from the use of nitrate of silver and potassium permanganate than from any of the more recent drugs. In the consideration of the treatment of chronic gonorrhœa the importance of ascertaining the exact seat of the inflammation and of demonstrating the presence or absence of gonococci is dwelt upon, and the more frequent use of the endoscope is urged.

The second part of the work is devoted to gonorrhœa in women. Gonorrhœal inflammation of the urethra, vagina, uterus, and Falloppian tubes is considered in thirty pages; this section is necessarily incomplete. The book is of special value on account of its attention to the details. Each method of treatment is carefully described, the author stating exactly how and under what conditions it should be used, leaving little to the imagination of the reader.

De l'ouverture large de la caisse et de ses annexes. Par le Dr. E. J. Moure, Chargé de cours à la Faculté de médecine de Bordeaux. Bordeaux: Feret et Fils, 1897. Pp. 65.

This is a description of the author's method of operating in cases of obstinate otorrhœa. There is no material difference between this method and those adopted by leading otologists. Several woodcuts assist in the elucidation of the text, which is further illustrated by the histories of several cases.

La condition nécessaire de la vie et de l'évolution considérée comme condition de la maladie et du dépérissement sénile de l'organisme. Introduction aux études cliniques. Par le Dr. C. Pawlinow, Professeur de clinique thérapeutique à la Faculté de médecine de l'Université de Moscou. Moscou: Alexandre Lang, 1897. Pp. 3 to 89.

In this pamphlet there is presented an elaborate and exceedingly fanciful theory of the nature of life, the "necessary condition" of which is found to be a constantly insufficient supply of oxygen to the cell. Variations in the resulting oxygen-hunger are the cause of the phenomena of life, growth, disease, and death. The author's discussion of these topics is interesting and suggestive, and, although unconvincing, it represents an ingenious effort toward the solution of what Virchow has styled the "problem of the coming century."

BOOKS, ETC., RECEIVED.

Lectures on the Malarial Fevers. By William Sydney Thayer, M. D., Associate Professor of Medicine in the Johns Hopkins University. New York: D. Appleton and Company, 1897. Pp. vii–326. [Price, $3.]

Traumatic Injuries of the Brain and its Membranes.

With a Special Study of Pistol-shot Wounds of the Head in their Medico-legal and Surgical Relations. By Charles Phelps, M. D., Surgeon to Bellevue and St. Vincent's Hospitals. With Forty-nine Illustrations. New York: D. Appleton and Company, 1897. Pp. xiv–582. [Price, $5.]

A Practical Treatise of Sexual Disorders of the Male and Female. By Robert W. Taylor, A. M., M. D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York, etc. With Seventy-three Illustrations and Eight Plates in Color and Monotone. Lea Brothers and Company: New York and Philadelphia. Pp. xi–2 to 451. [Price, $3.]

Diseases of the Gall Bladder and Bile Ducts. By A. W. Mayo Robson, F. R. C. S., Member of Council and Hunterian Professor of Surgery and Pathology, Royal College of Surgeons, London, etc. New York: William Wood and Company. Pp. viii–9 to 150.

Constipation in Adults and Children. With Special Reference to Habitual Constipation and its most Successful Treatment by the Mechanical Methods. By H. Illoway, M. D., formerly Professor of the Diseases of Children, Cincinnati College of Medicine and Surgery, etc. New York: The Macmillan Company, 1897. Pp. xv–3 to 495. [Price, $4.]

Essentials of Obstetrics. By Charles Jewett, A. M., M. D., Sc. D., Professor of Obstetrics in the Long Island College Hospital, and Obstetrician to the Hospital, assisted by Harold F. Jewett, M. D. Illustrated by Eighty Woodcuts and Three Colored Plates. New York and Philadelphia: Lea Brothers and Company, 1897. Pp. viii–13 to 358. [Price, $2.25.]

A Manual of Legal Medicine for the Use of Practitioners and Students of Medicine and Law. By Justin Herold, A. M., M. D., formerly Coroner's Physician of New York City and County, etc. Philadelphia: J. B. Lippincott Company, 1897. Pp. xv–11 to 678. [Price, $4.]

Text-book of Medical and Surgical Gynæcology. For the Use of Students and Practitioners. By R. W. Garrett, M. A., M. D., Professor of Obstetrics and Gynæcology in the Medical Faculty, Queen's University, Kingston, etc. Containing over One Hundred Illustrations. Kingston, Ontario, 1897. Pp. 8–9 to 419. [Price, $2.50.]

Principles of Medicine. Designed for Use as a Textbook in Medical Colleges, and for Consideration by Practitioners Generally. By Charles S. Mack, M. D., one of the Professors of Materia Medica and Therapeutics in the Hahnemann Medical College and Hospital, Chicago, etc. Chicago: The W. T. Keener Company, 1897. Pp. v–9 to 133. [Price, $1.]

Tuberculosis of the Genito-urinary Organs, Male and Female. By N. Senn, M. D., Ph. D., LL. D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, etc. Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. vi–17 to 311. [Price, $3.]

The Origin of Disease, especially of Disease resulting from Intrinsic as opposed to Extrinsic Causes. With Chapters on Diagnosis, Prognosis, and Treatment. By Arthur V. Meigs, M. D., Physician to the Pennsylvania Hospital. With One Hundred and Thirty-seven Original Illustrations. Philadelphia: J. B. Lippincott Company, 1897. Pp. xiv–229.

The Normal and Pathological Circulation in the Central Nervous System (Myel-encephalon). Original Studies. By William Browning, Ph. B., M. D., Attending Neurologist to the Kings County Hospital, etc. Philadelphia: J. B. Lippincott, 1897. Pp. 8–9 to 171. [Price, $1.50.]

A Quiz of Histology, General and Dental. By Charles B. Reed, M. D., Professor of General Histology, Northwestern University Dental School, etc., and Frederick B. Noyes, B. A., D. D. S., Professor of Dental Histology, Northwestern University Dental School. Chicago: The W. T. Keener Company, 1897. Pp. vii–203.

New Inventions, etc.

A NEW FORM OF INTRA-OCULAR IRIS SCISSORS, AND THEIR APPLICATION IN INTRA-OCULAR SURGERY.*

By Henry W. Wandless, M. D.,
DALLAS, TEXAS.

These new scissors are the outcome of several unsuccessful attempts to relieve an iris which had prolapsed into an opening in the cornea, the result of an injury. This accident is quite frequent, and, so far as I know, there has never been devised an instrument which has proved a success for its relief. This instrument is designed to operate upon prolapsed irides, anterior and posterior synechiæ, and secondary cataracts, also for performing capsulotomy and discission.

After a number of experiments, and with the valuable assistance of George Tiemann & Co., I have to submit to the profession an instrument which is very new, novel, and what is better still, a success. I have been extremely gratified with the results so far obtained with this new instrument; so much so, indeed, that I feel confident that the majority of cases of this character may now be successfully operated upon. I am satisfied that every oculist has had cases of prolapsed irides which baffled his skill and which he finally abandoned for the want of a suitable instrument with which to operate. An instrument designed for intra-ocular surgery should meet certain essential requirements. I refer especially to its mechanical construction, as follows:

1. It should be very delicately constructed.
2. It should have sufficient strength to cut the iris and cicatricial tissue.
3. The blades must pass through the substance of the cornea without a hitch.
4. The blades must cut on both their inside and outside, the instrument having four cutting edges.
5. The joint must be so perfect in fit and adjustment as to prevent the escape of fluid from the anterior chamber during the operation.
6. The movement of the blades should be within the anterior chamber.
7. The handles should be so designed that the fingers may have the freest and most natural movement.
8. The blades, when closed, must be spear-shaped, cutting from point to heel in passing the cornea, and from heel to point when severing the attachments. These requirements have been anticipated and, I think, very nearly met.

As regards the delicacy of the scissors, it does not seem possible to make it greater without sacrificing their utility. The longer blade is about an eighth of an inch long, and the other one shorter, and about a sixteenth of an inch wide at the heel. It is made upon the alligator-jaw fashion, one blade only being movable, which is hinged to the shank and its fellow by two very delicate rivets.

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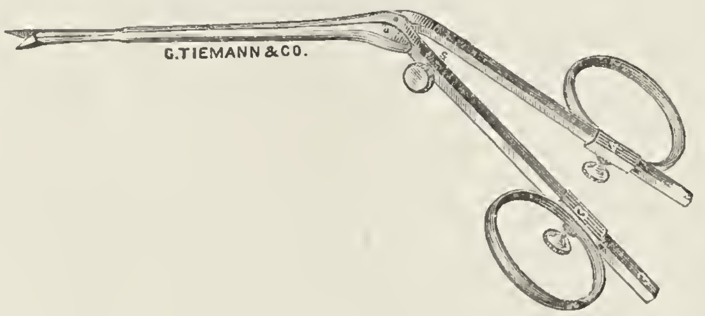
* Read before the New York State Medical Association, October 13, 1897.

The strength of the scissors is remarkable, and is obtained by a sort of mortise-and-tenon joint, forming a shoulder where the blades fit into the shank. In this way very little strain is thrown upon either rivet, the force being applied directly against the shoulder. The hinged blade is a little shorter than its fellow and fits so closely to it that when the longer blade passes through the cornea, it follows it closely and smoothly. The outside cutting edge of the scissors merges into a thin, non-cutting edge after passing the heel, so that the wound in the cornea can not be made larger as the scissors are manipulated.

If the fluid in the anterior chamber escapes before the operation is begun, the chamber collapses immediately and further procedure is impracticable, for it would be exceedingly hazardous to manipulate a sharp-pointed instrument of this character under such circumstances, having the delicate lens capsule against it on one side and the cornea on the other. It is very essential then to *prevent* the escape of fluid, and these scissors do it very effectively.

The blades must be sharp far enough back to pass them beyond the heel before it is necessary to open them; otherwise they will become bound in the wound and their action be limited. An attempt to open the blades while they are passing the cornea enlarges the wound, and when the heel is passed beyond this point the fluid escapes, as the shank does not fill the enlarged corneal incision.

The handles are curved at an angle to the shank of about twenty degrees, which seems to admit of the most natural position of the fingers and wrist, so that the instrument can be more easily manipulated and the cornea be penetrated at any point offering the best advantage. By a sort of leverage at the handle joint one half of the shank is pushed toward the point of the scissors (the other remaining stationary), and, as it does so, the blade is carried before it and is closed. The reverse action opens it.



Two rings are placed, one upon either handle, in which the thumb or finger is inserted to open or close them. By a set-screw these rings are adjusted on the handle to suit the operator. A set- or stop-screw (which is very important) is also placed between the handles, which provides for perfect adjustment of the points of the blades and prevents undue force, when applied to the handles, either breaking or damaging the instrument.

The scissors may be used with the handles up or down, as is most convenient for the operator.

Technique of the Operation.—Prepare the eye for the operation as you would for iridectomy or cataract extraction; sterilize the scissors by placing them in boiling distilled water, having previously immersed the blades in olive oil, which prevents the water from rusting the joints. As a precaution I will mention that bichloride-of-mercury solution placed in the eye is apt to injure the instrument. Having decided upon the point of attack, the eye is held with a fixation forceps in the left hand and the intra-ocular iris scissors are held in the right, as much as possible of the conjunctiva with its subjacent tissue being taken up in the bite of the forceps. I will add here that the eye is much more easily controlled when a great amount of the conjunctiva is included within the forceps's grasp than when only a small portion is held; as the membrane is very elastic, a small portion acts as a loose pedicle and does not give good support to the eyeball, and any force not directed squarely against this pedicle turns the eye in whatever direction the force is applied, taking, of course, into consideration the support afforded by the ocular muscles, the optic nerve, etc. When a great amount of the membrane is included in the bite of the forceps, it acts as a band does around a marble the two ends of which are held firmly between the thumb and fingers, binding the body in its entire circumference; in other words, it puts the conjunctiva on the stretch entirely around the globe, by which, together with the support afforded by the ocular muscles, nerves, fascia, etc., the eye can be held very steady and securely.

The point of the scissors is inserted through the cornea close to but not in the sclero-corneal junction, as the scissors pass more easily through corneal tissue. In this step the point of the instrument is entered and carried across the chamber exactly as a cataract knife is for cataract extraction, to the parts to be operated upon, then by separating the handles the blades are opened and pushed forward, the endeavor being to complete the operation by one snip of the scissors. The blades are then closed and the instrument is withdrawn very carefully to prevent a rush of aqueous, carrying with it a portion of the iris, rendering the latter state of the patient as bad as the first, if not worse. If the operation is not completed, and further procedure is impracticable on account of hæmorrhage or loss of fluid, it should be deferred for another sitting. The eye is bandaged and treated as in other intra-ocular operations. After the first twenty-four hours there is little danger of prolapse, and at that time the eye may be inspected and the bandage re-applied, to remain forty-eight hours, when it may be removed entirely. It is advisable always to instill a solution of atropine to prevent posterior and possibly anterior synechia.

If the portion of the iris thus excised has no sustenance by its connection with the cornea, it will disintegrate and be absorbed by the fluids of the anterior chamber.

The operation here described is for an uncomplicated case of prolapsus iridis. There are cases, however, which require certain modifications of the technique on account of various complications and conditions which must be recognized before the operation is begun. We often find that a central corneal opacity complicates a prolapsus or adhesion, which may occur in any puncture or ulcer of the cornea, and, if it can be properly operated upon, allows the iris to retract and form an artificial pupil at the side of the opacity. This result is very much better than that of iridectomy, because the continuity of the circular fibres of the iris at its ciliary margin has not been broken, and its functional activity is but very slightly disturbed. From an iridectomy such a happy result would not be expected; on the contrary, one would have a keystone-shaped opening in the iris embracing its full radius, and the natural pupillary contractions and dilatations would be seriously impaired.

In operating with these scissors for the double purpose of making an artificial pupil and at the same time relieving the incarceration or adhesion, the operator must exercise considerable judgment in determining the direction of his incision; that is to say, whether the scissors are introduced into the anterior chamber on the same side of the cornea as the adhesion (first position), or on the opposite side (second position), or on a line parallel with the edge of the adherent iris (third position). These different positions have something to do with the size and shape of the opening made in the iris. If the scissors are introduced on the same side as the adherent iris, the opening is made oval and presents an appearance much more sightly than when considerable of the pupillary margin is removed. The artificial pupil thus made embraces more of the radius of the iris than when either of the other positions is employed; the iris, having been pushed somewhat forward before the scissors, is put on the stretch, and, when freed, retracts considerably. In the second position the scissors are inserted on the opposite side of the cornea from the adherent portion, and when they grasp the iris it is not put on the stretch, as in the first position, for the scissors engage that portion which corresponds to the pupillary edge, and it can only slightly recede, as the force is applied against the incarceration. When the cut has been completed it is found that the external margin of the opening does not extend so near the ciliary margin; so, if the corneal opacity is at all extensive, the position offering the most useful pupillary exposure should be selected for the operation. If the scissors are introduced on a line parallel with the adherent iris and corresponding with the pupil's margin, the section taken from the iris has its long diameter on the same line. The third position is useful when the adherent band is too broad to be taken within the grasp of the blades. If the opacity is small, an extensive opening is not desirable.

It is thus seen that an artificial pupil may be made at the same time that the iris is released; and in every case the pupil is made larger or smaller, as the section is made away from or close to the posterior corneal surface. When there is no opacity, it is important to have the artificial pupil as nearly of the size of its fellow as possible, that they may act in harmony, as well as for the sake of personal appearance.

It should be remembered that it is important to sever all the fibres at one snip of the scissors, as hæmorrhage follows immediately. This greatly interferes with further procedure, and often renders it impossible. If the adherent portion is extensive and completely severed at one cut, it is crowded within the narrow limits of the delicate blades and put on the stretch; the opening then made is necessarily large.

The description so far has been confined to cases of anterior synechiæ and prolapses of the margin of the iris. Those prolapses and adhesions which occur at various distances from the pupil's margin, and are not complicated by a corneal opacity, require very close attention, for the reason that it is important to make a small opening in the iris on account of its interference with the natural pupil. In fact, it is a question whether any advantage is gained by an operation, especially if the prolapse is small. A corneal opacity over the opening in the iris at this point might be of advantage. If the operation is advisable, the section should be made very near the posterior surface of the cornea, in order to secure the least amount of retraction. A solution of atropine or eserine should always be used before operating, first, for diagnostic purposes, and, second, to draw upon the iritic attachment. Cocaine is too feeble to produce this effect, and the one to be used will depend upon the location of the adhesion. This is also true in marginal adhesions and prolapses. This being done, we are able to study the attachment and the best mode of attacking it. We are also able to detect complications, such as posterior synechiæ, opacity of the lens capsule, and incipient cataract, and are better able to judge of the advisability of an operation.

I do not adhere closely to technical distinctions between the different conditions, whether the result of corneal ulcers, wounds of the cornea, or other causes, for the same general rules for operating are applicable to all.

I now wish to call attention to the operation upon posterior synechiæ, which require extremely delicate manipulation, for the reason that injury to the lens or capsule is fraught at times with very disastrous results; a puncture of the capsule causes traumatic cataract and absorption of the lens substance, while panophthalmitis is not improbable. In the first place, the scissors should always be introduced so that the movable blade moves away from the lens when the blades diverge. Dilate the pupil with a solution of homatropine or atropine, and anæsthetize thoroughly with a solution of cocaine, twelve or fifteen per cent., which draws the non-adherent iris away from the lens while the adherent portion is put on the stretch and is recognized as a band of fibres radiating across the lens. It is observed in most cases, where the band is not too wide, that a little space exists between this band and the lens capsule, on account of the convexity of the lens. When the scissors are introduced into the anterior chamber, open the blades carefully and pass the stationary blade behind the iritic adhesion; then with one snip of the blades the adhesion may be severed. If the band is too broad and can not be included in the grasp of the scissors at one time, hæmorrhage will render further procedure impossible or extremely difficult, and the completion of the operation must be deferred for another sitting. If the adhesion includes the entire pupillary margin, this operation can not be done, and all that can be accomplished is to establish communication between the posterior and anterior chambers, which is done at some risk to the lens.

In the treatment of secondary cataract, I have had only one opportunity to test the scissors, with an excellent result, and I feel certain of their future. It is difficult to penetrate an opaque capsule, from its having lost its brittle character. The cut should be made across the capsule, which curls upon itself and opens the incision sufficiently to give considerable vision. Sometimes adhesions take place between the iris and the retracting capsule, by which the former is drawn entirely across the anterior chamber; an incision should be made in the iris across its radial fibres. Retraction and contraction of its fibres then take place on either side of the incision, and so a very serviceable pupil may be formed.

The operation of capsulotomy and discission does not need special mention here, as the same general rules and precautions which are necessary for other intraocular operations apply equally to them.

. The surgeon should use good judgment in the selection of his cases and in the use of this instrument, and not attempt to use it in inappropriate cases. I have had but three operations with these new scissors, two of which were entirely successful, as well as satisfactory; the other was complicated, which made a perfectly satisfactory result impossible.

The report of these cases, with others I expect to have, will be the subject of a subsequent paper.

Miscellany.

The Hot-air Treatment of Painful and partially Ankylosed Joints.—In an article on this subject in the October number of the *Annals of Surgery*, Dr. Charles H. Frazier, of Philadelphia, calls attention to an apparatus which has been employed in a series of cases in the University Hospital, where some three hundred baths were given to test its efficiency. It was found to be most satisfactory, and the author thinks that many good features may be alleged for it.

The required temperature can be obtained quickly, in from ten to fifteen minutes, and the apparatus is substantially but simply constructed, and involves nothing that can get out of order or require repair. The cases that were treated included acute and chronic articular rheumatism, gonorrhœal rheumatism, gout, traumatic arthritis, synovitis, tenosynovitis, and fibrous ankylosis.

The method of administering the bath was as follows: The patient's pulse and temperature were first taken and recorded. The limb, first being completely enveloped with a piece of lint, which was wrapped loosely about the part, was then placed in the cylinder. The time allowed for each bath was from three quarters of an hour to an hour. At intervals of twenty minutes the door of the cylinder was thrown open momentarily to allow of the ingress of a fresh supply of air. If the patient perspired freely, this opportunity was taken advantage of to wipe the limb thoroughly dry. If this precaution is not taken, says Dr. Frazier, and the limb is allowed to remain bathed with sweat, there is the possibility, if the temperature is exceedingly high, of a superficial burn resulting. This happened in several cases where the precaution was not taken. The degree of temperature that was employed varied, some patients bearing with perfect comfort a degree of heat which would be extremely painful to others. The average was about 300° F., although in one case the temperature reached 375°, to which the patient seemed quite indifferent. The frequency with which the baths were given varied with the severity of the case; usually, however, they were administered on every other day.

Concerning what actually takes place, the author continues, when a joint is subjected to a temperature of 300° F. for an hour, when the limb is removed from the apparatus there can be plainly seen a diffuse hyperæmia of the integument, indicative of a dilatation of the capillaries and arterioles. The general temperature of the patient will be from half a degree to a degree elevated above normal, and the pulse will be increased in frequency from ten to twenty beats a minute, which of itself suggests the possibility of an increased blood supply to the affected limb. If the joint is not ankylosed, the patient will experience less pain and more freedom in the movements of the joint. The alleviation of pain is explained perhaps, says Dr. Frazier, by the anæsthetic effect of the heat on the nerve supply of the articular structures. These experimental observations demonstrated that certain physiological phenomena followed the application of heat, such as increased arterial tension, elevation of the blood pressure, dilatation of the lumen of the blood-vessels, diminution of the erythrocytes, decrease of hæmoglobin, increase in the elimination of nitrogen, and increase in frequency of the heart's action.

The author states that in cases in which there is a diathesis, either rheumatic or tuberculous, this treatment could have no beneficial constitutional effect. As regards the relief from pain which has been noted, two explanations may be considered, he says. One is that the exudate, both around and possibly in the sheaths of the nerves themselves, is responsible for pain, and when this exudate is all or in part removed the pain is correspondingly diminished. Another explanation, continues Dr. Frazier, is that the high temperature has an anæsthetic effect on the nerve filaments themselves. In cases in which there is purely a synovial effusion to deal with, if this hypothesis is true, if dilatation of the blood-vessels does take place, if the lymphatic circulation is stimulated to more vigorous action, this method of treating an effusion is, he thinks, at least a rational one. In cases of tuberculous joints in which the pathological changes are due originally to an infectious material, where there is infectious granulation, where, underlying the local lesion, there is the force of an inherited diathesis which predisposed to the original attack and acts as a constant barrier to the tissues regaining their normal vitality, he believes that this treatment could have no curative effect on the specific lesions. Beneficial results, however, may be expected after the active process has subsided and there remain troublesome adhesions which cause more or less ankylosis. Dr. Frazier here refers to four cases reported by Dr. V. P. Gibney, which correspond exactly to this type—namely, ankylosis following tuberculous affection.

In gonorrhœal rheumatism, which so stubbornly responds to present methods of treatment, says Dr. Frazier, we can hope for little more than in the one just under discussion. The symptoms are kindled by the bacteria or their toxines, and while the latter continue to be absorbed and keep alive the morbid changes in the articular and circumarticular structures, no positive results should be expected. When the gonorrhœa itself has been cured and the activity of the morbid process subsides, and we are confronted with a joint crippled in its movements by bands of adhesions, we may rightly and reasonably expect that the adhesions can more readily be broken up and the function of the joint restored by the hot-air treatment.

Permanent cures of local lesions, symptomatic of diathetic diseases, he repeats, are not to be looked for from the employment of hot-air baths.

The author maintains that for the relief of joint affections of traumatic origin this method of treatment is most useful and sometimes indispensable, and the results obtained can be called permanent, for when once the joint is restored to its normal functional activity there is no latent flame of an inherent or acquired diathesis to kindle anew the inflammatory process.

Dr. Frazier does not hesitate to recommend this method in the treatment of the sequelæ of any joint injuries which have proved intractable to the more commonplace remedies. He thinks there is a certain field for its use—namely, in cases in which internal remedies and local applications have failed to relieve the pain.

The Administration of Strychnine Phosphate during Gestation.—The *American Journal of Obstetrics* for October publishes an article by Dr. Walter Blackburn Dorsett, of St. Louis, in which he relates his experience with this drug. After a faithful trial, he says, of strychnine in combination with iron or the bitter vegetable tonics, he found it was followed with unsatisfactory results in many cases, and it occurred to him that free phosphorus, the well-known nerve tonic, would probably answer the purpose if combined with iron. This combination, however, resulted in disappointment, and the author was compelled to give up its use on account of the derangement of the stomach it almost always produced. The eructation of gases impregnated with the phosphorus, continues the author, was another and serious objection. However, not wishing to give up the use of a remedy which he says he regarded as theoretically of value, he began the use of the chemical union of phosphorus and strychnine as prepared by Merck. Afterward he used gelatin-coated pills prepared by Parke, Davis, & Co., each containing a hundredth of a grain of the strychnine phosphate. The following observations were made by the author while using the strychnine phosphate during gestation in weak and debilitated patients:

A good appetite and a good assimilation are obtained in the general weakness and debility of the anæmic, constipation is relieved, and, in short, the patient is built up and placed in a good condition to pass through the ordeal of labor; the uterus contracts promptly after the third stage of labor, and the use of ergot may be entirely dispensed with. If it is necessary to use the forceps the patient is given a hypodermic injection of a thirtieth of a grain of strychnine or strychnine phosphate as soon as the anæsthetic is begun, but no ergot is ever used. He has also observed that after the continuous use of the strychnine phosphate the uterus contracts promptly after the second stage of labor; and in many cases the application of Credé's method of expression of the placenta is not needed to bring it away, and no post-partum hæmorrhages have occurred. The often-observed chilliness or rigors which, in the majority of cases, follow labor have been noticed in but few cases. These rigors, so common after labor, little account of which can be found in the text-books, is nothing more nor less than surgical shock. This is obviated by the prophylactic—strychnine.

Dr. Dorsett states that he has used strychnine for some time in his abdominal surgery, for the purpose of preventing shock and to control the pulse during the operations, and in this way was led to its use in obstetrics; also that he has found strychnine phosphate to act better as a laxative than either the sulphate or nitrate.

A Case of Moon Blindness.—Dr. Ivan A. Centervall reports the following case in the *Boston Medical and Surgical Journal* for October 7th: During the first week of May, 1895, a young man, seventeen years old, sailed from the Argentine Republic to Norway. One night during the first week in June he had been asleep for some time, and in his sleep had uncovered his face. He noticed nothing unusual until about eight o'clock in the evening, when he had difficulty in finding his way about on deck, even walking against other members of the crew who happened to come in his way. On remarking to one of the crew what a dark evening it was, he was surprised to be told that the moon and stars were shining bright. When he came on deck again at midnight, his sight was somewhat better, but the following evening he could distinguish nothing after sunset. For about a week he went about his duties as best he could, being able to see perfectly well between sunrise and sunset, and experiencing no difficulty then, except that sometimes shadows and flashes seemed to pass in front of his eyes. After sunset, however, he was unable to locate any object, although he was able to see it—that is, he could see nothing straight ahead, but could make out objects at the side of his line of vision, although he did not know just where they were. He was then ordered to tie something around his eyes and to remain in the forecastle (none too light at best), bathing his eyes with sea-water at frequent intervals. In this fashion he spent about ten days, but with no apparent improvement. The ship was then off the Azores, and from that time until they reached Norway, about July 15th, he used to work all day and sleep at night. In Norway the crew left the ship, the young man going by steamer to his home in southern Sweden. His impairment of vision was still so pronounced that he could not find his way about on board the steamer, or distinguish anything in the evening. Shortly after reaching home he noticed that an improvement had set in, and about five weeks later, when he left Sweden to come to Boston, he was not conscious of any defect of vision.

Poisoning with Nitrobenzene.—In the *Province médicale* for September 11th (*Indépendance médicale*, September 29th) M. Paul Courmont remarks that the essence of bitter almonds, which owes its toxicity to the hydrocyanic acid contained in it, is often replaced in commerce by a false product presenting the same odor; this is nitrobenzene. This substance is also toxic. In the poisoning caused by either of these drugs the patient's breath gives out a more or less marked odor of bitter almonds. The identity of the odors of these toxic products, which led to the substitution of one for the other, may clinically, in cases of poisoning, lead to confusion, to a mistake in ætiological diagnosis, and to the wrong treatment.

The diagnosis is based especially on the odor of bitter almonds diffused by the patient's breath, on the symptoms of asphyxia which appear at a variable length of time after the ingestion of the poison, and on the cyanosis, which is extremely marked and persistent.

The treatment consists of the following: 1. Evacuation of the poison by all the ordinary methods, such as emetics and lavage of the stomach. 2. Stimulation of the organism by all internal and external excitants, including electricity. 3. The prevention of asphyxia by artificial respiration, which is to be prolonged until the patient regains normal respiration. 4. According to Dujardin-Beaumetz, hypodermic injections of atropine or of tincture of belladonna may be used.

Antipyrine and Lactation.—After various researches made by M. G. Fieux, says a writer in the *Bulletin médical* for September 5th (*Tribune médicale*, September

22d), he reached the following conclusions: 1. Antipyrine certainly passes in a natural state into the milk. 2. Given in large doses, in two capsules each containing fifteen grains at intervals of two hours, it may be detected in the milk in from five to eight hours after its ingestion, and from nineteen to twenty-three hours afterward it can not be discovered, so elimination lasts eighteen hours at the maximum. 3. The antipyrine during this time passes into the milk only in an excessively weak proportion, very much less than fifty parts in a thousand; it is only in exceptional conditions, for instance, when sixty grains are administered in sixteen hours, that it perceptibly reaches this proportion. 4. It does not influence in any way the quality of the milk and, particularly, the lactose, the casein, or the fat. 5. It seems to have no action at all on the secretion, which always remains very abundant, provided the woman continues to nurse. 6. From the absence of general symptoms and from examinations of the weight, the infinitesimal quantity absorbed by the nursling does not seem to have any unfavorable action.

The Abuse of Medical Charity.—In a paper read before the recent meeting of the New York State Medical Association, Dr. Frederick Holme Wiggin, of New York, said that his object was not so much to present individual views as to cull from recent literature, both lay and medical, the opinions of many writers. He said that it was easy to demonstrate conclusively that, as at present administered, medical charity was demoralizing to both the recipient and the donor. Some idea of the alarming growth and extent of this evil might be obtained from the carefully prepared report of Dr. Stephen Smith to the State board of charities. Here it was shown that during the year 1895 837,971 persons applied for and received free medical treatment at 105 dispensaries in this city; that 1,418,847 free visits were made by these applicants to these dispensaries; and that 78,000 persons received free board, lodging, nursing, drugs, surgical dressings, and treatment—in other words, that something more than forty-nine per cent. of all who lived within our borders had professed in one year to be unable to care for themselves. This should be contrasted with another statement by Dr. Smith to the effect that during the period from 1791, when the first dispensary was established in New York, to about 1870, the applicants for charity bore a ratio to the total population of 1.5 per cent.

Dr. Wiggin then went on to quote from an editorial in the *New York Herald* to show that Greater New York spent fifty millions of dollars every year on charities, and that, according to a conservative estimate, fully fifty per cent. of the donors' money was diverted from the purpose for which it was intended, and was practically filched from the poor, to whom it rightfully belonged. Again, according to one author, Dr. J. B. Huber, one might find in large numbers at dispensaries such people as actors, opera singers, gamblers, bartenders, policemen, farmers from out of town, prosperous business men and those owning houses, lawyers, and perhaps even a stray railway president. According to another author, Dr. George F. Shrady, fully fifty per cent. of the applicants in the reception room of a well-known institution which he dubbed "the diamond dispensary" were well dressed; ten per cent. were finely dressed; more than half the men bore no evidences of poverty; and among the women there was an attractive display of fine millinery—yet all obtained the free treatment supposed to be given only to poor persons. A reporter on one of the daily papers, describing what he had seen at a well-known clinic, stated that not more than one in fifty was at all shabbily dressed; a large majority were fairly well dressed; one third of them were quite presentably dressed, and perhaps one fifth were positively well dressed. The reader of the paper said that he knew of a man who paid an enormous rent in a fashionable apartment house near Central Park, and who spent many thousand dollars a year on living expenses, yet went to what Dr. Shrady had so aptly termed "the diamond dispensary," on the plea that his expenses were so heavy that he could not afford to pay a fee to a doctor. Surely, the author continued, these instances certainly showed the spirit in which charity was asked for and accepted; it was largely a desire to save money, without apparently thinking that self-respect was lost in the effort, or that a wrong was done to the really poor and to the physician, who was certainly as much entitled to his hire as the clergyman or other members of the community, as he, too, had social obligations to fulfill. More than this, as Dr. Schweck had well said, in the Philadelphia *Press:* "People of means who go to charity dispensaries and receive treatment free of charge, representing themselves to be too poor to pay for medical services, commit a criminal act, for they obtain what they are not entitled to, and do it under false pretenses."

Another and important aspect of this subject had been revealed in a communication from Dr. G. M. Roe, medical superintendent of the Boston City Hospital, to the *Boston Herald.* He said: "It is a generally accepted fact among people who have had large experience in doing charitable work that the first thing that a man or woman will accept as charity is medical attendance. They will accept free service of the doctor when you could not prevail upon them to accept rent or fuel, or anything of the kind, as a gift. The acceptance of gratuitous medical attendance is the first step toward pauperism. There is already a tendency toward what is generally known as 'nationalism,' a belief among the common people that the city and the State owe them a living, and that medical attendance, among other things, should be furnished them by common taxation, regardless of their financial standing as individuals." Again, as Dr. J. J. Stevenson had expressed it in the *Mail and Express:* "If recovery from disease is secured at the expense of self-denial, the memory of the cost will lead, in ordinary cases, to care that a recurrence of disease and attendant expenses may be prevented. But if the careless feel that treatment, medicine, and even diet can be had simply for the asking, there can be no reason for resisting the natural tendency to neglect the laws of health. . . . It is not surprising that the reckless poor see in such careless giving an acknowledgment of the unequal distribution of wealth, and believe that it is founded on injustice; nor is it strange that the anarchist's cry is not for opportunity to earn by labor, but for such distribution of wealth as may enable all to enjoy the luxury of idleness."

The following were the conclusions arrived at by Dr. Wiggin after a critical review of the subject: 1. That medical charity, as at present administered, is an unqualified evil, and is seriously menacing our existing social conditions. 2. That the application for free treatment of those able to pay the physician a moderate fee for his services robs the really poor. 3. That all medical charitable institutions should be under the direction and control of State and local boards of charities, which should have the power to enforce their rules. 4. That all applicants for medical charity should be investigated by local charity boards, and the unworthy excluded. 5. That no medical charitable institution should be allowed to charge nominal sums for medical or surgical service, nor should they be allowed to charge for medicines or appliances. 6. That all physicians connected with charitable institutions should be paid for the service which they render. 7. That it should be made a misdemeanor, punishable by fine, for any person to receive free medical treatment by reason of false representations as to financial condition. 8. That State or city aid should not be granted to private medical charities.

The Use of Senecio in Disorders of Menstruation.—In the September number of the *Medical Chronicle* Dr. Fothergill reports the results of his personal observations during experiments with this drug. The cases in which he employed the preparations of senecio he divides into four groups as follows: 1. In pregnant women. 2. In amenorrhœa without pregnancy. 3. In persons menstruating regularly. 4. In dysmenorrhœa.

In the first group seven cases are cited by the author, which show, he thinks, that senecio will not cause abortion or in any way influence the course of pregnancy. In the second group, comprising ten cases which were all true functional amennorhœa, the senecio acted very well. No general disease, such as anæmia or phthisis, was present, and there was no deficiency, congenital or other, of the reproductive organs. The nervous mechanism which initiates the menstrual flow was, however, inactive in each case; senecio appeared to be effective in stimulating it into action. In cases of anæmia, however, and other conditions of exhaustion due to disease, he says, he has found senecio quite inactive in restoring menstruation. In such cases the cause of amenorrhœa is, of course, that the patient has no blood to spare, and treatment by a direct emmenagogue can not be expected to have any effect, while indirect treatment by food, iron, etc., is indicated.

Concerning the third group, the author goes on to say, certain minor gynæcological operations should be done soon after a menstrual period, and both patient and operator are often put to inconvenience by having to postpone the date of operation while waiting for menstruation to occur. In several cases of this kind it was interesting, he says, to find that the administration of senecio was followed by the appearance of the menstrual flow earlier than it was expected. The results, he remarks, are of value only in the cases of women who menstruate with perfect regularity, and six experiments were made in cases of this nature. They show that senecio hastens the flow, but that it does not increase it in quantity. On the contrary, a period thus brought on prematurely appears to be of shorter duration than one occurring at the natural time.

Regarding the fourth group, senecio was given in four cases of dysmenorrhœa, with no organic disease of the reproductive organs, in which numerous remedies had previously been tried with varying results.

The results of these experiments have led the author to agree with Murrell that senecio is not an ecbolic, also that the drug will not provoke menstruation in cases of marked anæmia or advanced phthisis, but that it will do so in cases of functional amenorrhœa. Murrell, however, he continues, thinks that senecio increases the quantity of the discharge, but the author's cases point to the opposite conclusion. He states that the views of Bardet and Bolognesi are identical with his own on these points, though he dissents from their views as to the mode of action of the drug. As to dysmenorrhœa, he continues, Murrell, Dalché, and Heim found the drug useful in certain cases, while he is inclined to agree with Bardet and Bolognesi that it will not be found of much use for the relief of pain.

Finally, he is of the opinion that the pharmacology and chemistry of the plants of this genus should be worked out by competent hands, and that those interested in disorders of menstruation will find the drug worthy of a clinical trial.

Some Remarks upon Measles, Prompted by the Recent Epidemic in Louisville.—Under this heading there is an article by Dr. John A. Larrabee, of Louisville, in *Pædiatrics* for October 1st, of which the following is the substance: It has always been conceded, he says, that there are some peculiarities belonging to measles which are not characteristic of other exanthemata, and it is well to bear these peculiarities in mind in order to avoid mistakes in diagnosis. While the incubation of the measles microbe requires the same length of time as that of chicken-pox, small-pox, whooping-cough, and mumps, the initial stage consists of three days of fever and coryza, and the eruption appears on the fourth day, preceding which there is a notable drop in temperature. It is this decline in temperature with a slight amelioration of symptoms which causes one to say we are mistaken, it is only a "bad cold," when *presto* the rash appears, and with it a rise of temperature, which remains throughout the eruptive stage.

The cough is quite diagnostic, and when taken together with sneezing and lacrymation, may be sufficient to enable one to predict the appearance of the disease. The cough is apt to be confounded with that of catarrhal croup. In fact, the condition of the larynx is analogous to what it is in croup, but the absence of stridor and aphonia is sufficient to make the distinction.

A point of the greatest practical importance, says the author, is the knowledge of the affinity of measles for mucous membrane. In describing the epidemic of scarlatina a year ago, he says, he laid equal stress upon the importance of recognizing the affinity of this disease for serous membrane. Thus it is, he says, that in measles we expect bronchitis, bronchial or catarrhal pneumonia, ophthalmia, entero-colitis, elytritis, etc., while in scarlatina we watch with anxiety the joints, and for pericarditis, endocarditis, peritonitis, pleuritis, and meningitis. While this rule will be found in the majority of instances to be correct, cases are not wanting in which rheumatism and consequently endocardial and pericardial complications have occurred as a sequel to measles. Physicians are often too willing to declare the absence of conditions for which they are not in the habit of examining. The presence of albumin in the urine will frequently correspond to the period of desquamation of measles. It has always been conceded from observation, he continues, that measles tends to the development of tuberculosis, and it was formerly considered to stir up a latency in heredity, but, says the author, now that more is known of tubercle, the observation of former years admits of a different explanation; nevertheless, he adds, the fact that tuberculosis follows measles with remarkable frequency still remains. Less frequently it has been observed that measles has been followed by a marked improvement in children who have been considered delicate or who have been afflicted with some chronic disease, such as infantile paralysis, rheumatism, asthma, etc. The explanation of such rare instances, says the author, may possibly be found in the benefit which not infrequently attends peripheral counter-irritation.

According to Dr. Larrabee the treatment of measles should be directed to the prompt development of the eruption. For this purpose the iodides with diaphoretics are justly entitled to consideration. Tincture of belladonna in small and frequently repeated doses is of great value and is well borne by children. In cases of retarded eruption, the sheet pack wrung out of hot water in which a tablespoonful of mustard flour has been steeped has proved effectual. Purgatives administered during the eruptive stage are prejudicial and their injudicious use has been followed by disastrous consequences, causing peritonitis and entero-colitis. The bowels, if constipated, should be relieved by enemata. The habit so much in vogue in domestic practice of giving hot drinks, etc., is altogether unnecessary. Good, cool and pure water is to be allowed *ab libitum*, and when so used it constitutes the best diaphoretic, diuretic, and expectorant.

The apartment in which the patient remains should always be selected by the physician. It should be airy and well ventilated, without draughts, and with facilities for maintaining a moderate amount of darkness, and an equable temperature, night and day, of 70° F. There should also be a means of producing moisture in the air. The prescriptions which have proved of greatest benefit in the author's hands have been as follows: To develop the eruption and allay incessant laryngeal cough:

℞ Syrup of hydriodic acid,
Syrup of Dover,
Syrup of Tolu, } each..... 1 ounce.

The Dover's syrup to be lessened for infants.

During the eruptive stage and throughout a broncho-pneumonia:

℞ Potassium acetate.............. 2 drachms;
Solution of ammonium acetate,
Camphor water, } each.... 3 ounces.

Give a teaspoonful every hour to a child, and a tablespoonful every hour to an adult. This treatment should be accompanied by the use of copious draughts of water. In case of sepsis, diphtheria, or debility, the author adds to the mixture a drachm of tincture of chloride of iron, which makes a sort of Basham's mixture, pleasant and effective.

A New Journal of Physiology.—We have received a circular in which it is stated that the number of investigations in physiology and its allied sciences now made in this country is so large that the present means of publication are no longer sufficient. To meet the needs of investigators in physiology, physiological chemistry, physiological pharmacology, and certain other branches of biology, a special journal will be published, the first number to appear in January, 1898. The *American Journal of Physiology*, as the new publication will be called, will contain in each volume about five hundred pages, divided into parts or numbers, to be issued whenever material is received. It is expected that not more than one volume a year will be printed. The *Journal* will be edited for the American Physiological Society by H. P. Bowditch, M. D., of Boston; R. H. Chittenden, Ph. D., of New Haven; W. H. Howell, M. D., of Baltimore; Frederic S. Lee, Ph. D., of New York; Jacques Loeb, M. D., of Chicago; W. P. Lombard, M. D., of Ann Arbor; and W. T. Porter, M. D., of Boston. It is not to be supposed, says the announcement, that a journal devoted solely to the publication of original researches in physiology will ever do more than pay for its paper and printing, and it is probable that some years must pass before the new enterprise will cease to be a financial burden on a small number of investigators. Yet the need of such a publication is undoubted. The aid of all friends of learning is asked until the *Journal* is established on a self-supporting basis. The subscription price, which is five dollars (£1 1*s.*; marks, 21; francs, 26) a volume, should be sent to W. T. Porter, M. D., No. 688 Boylston Street, Boston.

The Administration of Nitrous Oxide.—In an article on this subject in *Treatment* for September 23d, Dr. J. Frederick W. Silk remarks that the peculiarities of the administration and action of this gas are but little understood outside of the dental profession. The first principle of its administration, he says, is total exclusion of air by means of a carefully adjusted face-piece and suitable valves. So long as the apparatus employed is working properly, no anxiety need be felt if, in the beginning, the patient appears to hold his breath, for this is generally due to nervousness; or if, at a later period, the lividity becomes very pronounced. Occasionally there are some slight rhythmic movements of the limbs, and these are usually the only indications of the stage of excitement. If anything more decided occurs, there may be air-leakage of some sort, either under the face-piece or through a badly fitting tube or valve. The third stage, or stage of anæsthesia, is usually associated with more or less muscular spasm, subsultus tendinum, and irregular jerky laryngeal stertor. As a rule, says Dr. Silk, the two latter symptoms are taken as indications for the removal of the face-piece. These signs are in strong contrast with the muscular relaxation and insensibility of the corneal conjunctivæ observed with other anæsthetics.

The author thinks that a certain amount of risk is attached to the inhalation of nitrous oxide, but he thinks the danger to life is remarkably small, judging from the records. Syncope, he continues, is not unknown, but it is not more frequent than in any other procedure which involves a certain degree of nervous tension; he thinks its occasional occurrence, however, suggests the desirability of watching the circulation and keeping the finger upon the pulse, either in the temporal region or elsewhere. According to him, the chief difficulties and dangers are of an asphyxial type. Among these may be mentioned the falling back of the tongue over the glottis and foreign bodies falling upon the base of the tongue. A certain amount of asphyxia is often produced by blood trickling into the larynx, especially after the extraction of upper molar teeth, and the possibility of this occurring, says the author, points to the desirability of pushing the patient's body well forward as soon as possible, and of removing the mouth prop, for it is almost impossible for the patient to begin to swallow so long as the mouth is held wide open.

Occasionally, continues Dr. Silk, patients will groan or make more or less violent movements with the limbs during the stage of induction; under these circumstances, the author states, he is in the habit of shutting off the valves and so allowing the patient to breathe in and out of the bag, and at the same time pressing on the bag to force the gas through the face-piece. If this is done the trouble subsides in a few seconds. More unpleasant and of the same character, he thinks, is the almost maniacal condition which sometimes occurs in robust young men after the tooth has been removed and the patient begins to revive. This, says Dr. Silk, is almost invariably associated with recent alcoholism, and in such cases no restraint whatever should be attempted, as the condition lasts only for a few seconds.

Dr. Silk states that he knows of but very few cases in which nitrous oxide ought not to be administered. The frequent assurance of a weak heart, he says, is far too vague for any importance to be attached to it, and he states that he should not hesitate much, even in definite organic heart lesions, to give gas to a patient who was well enough to walk without assistance. The same, he remarks, may be said in regard to phthisical persons, although they are apt to become unduly livid.

Concerning the administration of this gas in pregnancy, Dr. Silk thinks it wiser to advise against it in the eighth or the ninth month. Very young children and even infants take gas well, but the fear inspired by the apparatus is probably greater than that of the operation, and he questions whether it is wise to force it upon them.

Concerning the after-treatment, more or less hysteria is not uncommon, and this, he says, must be treated with firmness, the attentions of overanxious friends must be discouraged, and the patient urged to help himself in every way. Nausea is not unknown, but it is very rare, and if it occurs at all, it will come on within a few minutes after recovery. As a rule, Dr. Silk thinks, it does more harm than good to keep the patient in a recumbent posture for any length of time; generally the patient is quite able to leave the house within fifteen or twenty minutes after the administration of the gas. Dr. Silk adds that it is better that no solid food should be taken for an hour or so after the administration.

The American Public Health Association.—The twenty-fifth annual meeting will be held in Philadelphia, on October 26th, 27th, 28th, and 29th, under the presidency of Dr. Henry B. Horlbeck, of Charleston. The following subjects will be discussed: The Pollution of Water Supplies; The Disposal of Garbage and Refuse; Animal Diseases and Animal Food; Car Sanitation; Steamship and Steamboat Sanitation; The Prevention of the Spread of Yellow Fever; The Transportation and Disposal of the Dead; The Relation of Forestry to Public Health; The Nomenclature of Diseases and Forms of Statistics; The Cause and Prevention of Infectious Diseases; Public Health Legislation; The Cause and Prevention of Infant Mortality; The Transportation of Diseased Tissues by Mail; River Conservancy Boards of Supervision; The Period during which each Contagious Disease is Transmissible, and the Length of Time for which each Patient is Dangerous to the Community; Sanitation, with Special Reference to Drainage, Plumbing, and Ventilation of Public and Private Buildings; Some Method of International Arrangement for Protection against the Transmission of Infectious Diseases; Disinfectants; and Existing Sanitary Municipal Organizations of the Countries belonging to the Association, with a View to a Report upon those Most Successful in Practical Results.

The special committees are: *Publication Committee.*—Dr. Irving A. Watson and Dr. Granville P. Conn, of Concord, New Hampshire; Dr. Samuel W. Abbott, of Wakefield, Massachusetts.

On the Pollution of Water Supplies.—Major Charles Smart, U. S. Army, of Washington, with authority to select associates.

On the Disposal of Garbage and Refuse.—Mr. Rudolph Hering, C. E., of New York; Dr. Benjamin Lee, of Philadelphia; Dr. J. A. Beaudry, of Montreal; Mr. Roberto Gayol, of Mexico; and Mr. W. C. R. Colquhoun, of Wilmington, Delaware.

On Animal Diseases and Animal Food.—Dr. D. E. Salmon, of Washington; Professor José L. Gomez, of Mexico; Dr. Henry N. Avery, of Minneapolis; Dr. Irving H. Watson, of Concord, New Hampshire; and Dr. C. N. Hewitt, of Red Wing, Minnesota.

On Car Sanitation.—Professor S. H. Woodbridge, of Boston; Dr. Granville P. Conn, of Concord, New Hampshire; Mr. E. C. Jordan, C. E., of Portland, Maine; Dr. Domingo Orvañanos, of Mexico; and Dr. William C. Bailey, of Las Vegas, New Mexico.

On Steamship and Steamboat Sanitation.—Dr. Frederick Montizambert, of Quebec; Dr. Albert L. Gihon, of the U. S. Navy, New York; Dr. S. H. Durgin, of Boston; Dr. Walter Wyman, of the U. S. Marine-Hospital Service, Washington; and Dr. Alvah H. Doty, of Staten Island, N. Y.

On the Prevention of the Spread of Yellow Fever.—Dr. Felix Formento, of New Orleans; Dr. George M. Sternberg, of the U. S. Army, Washington; Dr. Eduardo Licéaga, of Mexico; Dr. Manual Carmona y Valle, of Mexico; Dr. Samuel R. Oliphant, of New Orleans; Mr. Alfred V. Wood, of Brunswick, Georgia; and Dr. Joseph Y. Porter, of the U. S. Army, Key West, Florida.

On the Transportation and Disposal of the Dead.—Dr. C. O. Probst, of Columbus, Ohio; Dr. Elzéar Pelletier, of Montreal; Dr. J. D. Griffith, of Kansas City; Dr. Peter H. Bryce, of Toronto, Ontario; and Dr. David Cerna, of Galveston, Texas.

On the Relation of Forestry to Public Health.—Dr. J. F. A. Adams, of Pittsfield, Massachusetts; Dr. Salvador Garciadiego, of Guadalajara, Mexico; Dr. John Coventry, of Windsor, Ontario; Dr. James B. Eagleson, of Seattle, Washington; and Dr. William H. Brewer, of New Haven.

On the Nomenclature of Diseases and Forms of Statistics.—Dr. Samuel W. Abbott, of Wakefield, Massachusetts; Dr. Jesus E. Monjaras, of San Luis Potosi, Mexico; Dr. Elzéar Pelletier, of Montreal; Dr. Cressy L. Wilbur, of Lansing, Michigan; and Dr. A. G. Young, of Augusta, Maine.

On the Cause and Prevention of Infectious Diseases.—Dr. J. J. Kinyoun, of the U. S. Marine-Hospital Service, Washington; Dr. C. N. Hewitt, of Red Wing, Minnesota; Dr. George M. Sternberg, of the U. S. Army, Washington; Dr. Jesus E. Monjaras, of San Luis Potosi, Mexico; Dr. Peter H. Bryce, of Toronto, Ontario; Dr. A. Walter Suiter, of Herkimer, N. Y.; and Dr. Wyatt Johnston, of Montreal.

On Public Health Legislation.—Dr. Henry P. Walcott, of Cambridge, Massachusetts; Dr. J. N. McCormack, of Bowling Green, Kentucky; Dr. James D. Plunket, of Nashville; Dr. Henry B. Baker, of Lansing, Michigan; Dr. Samuel R. Oliphant, of New Orleans; Dr. Benjamin Lee, of Philadelphia; Dr. U. O. B. Wingate, of Milwaukee; Dr. C. O. Probst, of Columbus, Ohio; Dr. E. P. Lachapelle, of Montreal; Dr. Gregorio

Mendizabal, of Orizaba, Mexico; Dr. James Patterson, of Winnipeg, Manitoba; Dr. Henry D. Holton, of Brattleboro, Vermont; and Dr. Daniel Lewis, of New York.

On the Cause and Prevention of Infant Mortality.—Dr. Charles N. Hewitt, of Red Wing, Minnesota, with authority to select associates.

On the Transportation of Diseased Tissues by Mail.—Dr. E. P. Lachapelle, of Montreal; Dr. Henry Mitchell, of Asbury Park, N. J.; and Dr. Domingo Orvañanos, of Mexico.

On River Conservancy Boards of Supervision.—Dr. Peter H. Bryce, of Toronto, Ontario; Dr. C. O. Probst, of Columbus, Ohio; Mr. Rudolph Hering, C. E., of New York; Mr. Allen Hazen, C. E., of Boston; and Dr. José Ramirez, of Mexico.

On the Period during which each Contagious Disease is Transmissible, and the Length of Time for which each Patient is Dangerous to the Community.—Professor Eduardo Licéaga, of Mexico; Dr. John L. Leal, of Paterson, N. J.; Dr. Fernando Lopez, of Mexico; Dr. Newton L. Bates, of the U. S. Navy, Washington; and Dr. J. J. Kinyoun, of the U. S. Marine-Hospital Service, Washington.

On Sanitation, with Special Reference to Drainage, Plumbing, and Ventilation of Public and Private Buildings.—Mr. J. W. Hughes, of Montreal; Dr. Miguel Marquez, of Chihuahua, Mexico; Mr. Crosby Gray, of Pittsburgh; Dr. John L. Leal, of Paterson, N. J.; and Dr. Franklin W. Wright, of New Haven.

On Some Method of International Arrangement for Protection against the Transmission of Infectious Diseases.—Dr. Stephen Smith, of New York; Dr. Frederick Montizambert, of Quebec; Dr. Eduardo Licéaga, of Mexico; Dr. Felix Formento, of New Orleans; and Dr. Charles Smart, of the U. S. Army, Washington.

On Disinfectants.—Dr. Franklin C. Robinson, of Brunswick, Maine, with authority to select four associates.

On Existing Sanitary Municipal Organizations of the Countries belonging to the Association with a View to Report upon those Most Successful in Practical Results.—Dr. Henry Mitchell, of Asbury Park, N. J.; Dr. Wyatt Johnston, of Montreal; Dr. Domingo Orvañanos, of Mexico; Dr. William Francis Brunner, of Savannah; and Dr. P. H. Bailhache, of the U. S. Marine-Hospital Service, Stapleton, N. Y.

Chairman of the Local Committee of Arrangements.—Dr. Benjamin Lee, of Philadelphia.

The Treatment of Relapsing Acne.—This disease, says Dr. Leslie Phillips, in the *British Medical Journal* for September 25th, may be so inveterate, so disfiguring, so relapsing, and so intractable that a cure can be effected only by continuous treatment extending perhaps over a year. In chronic cases, he says, the results of ordinary treatment are such as to induce continuance; it is in the subacute or relapsing cases that the difficulty lies, and the lack of necessary perseverance is due to the discouragement of both physician and patient; the result is that fresh acne lesions continue to appear. In such cases the indication is, according to the author, to subdue this tendency to fresh eruption by soothing the skin and diminishing hyperæmia. The calamine or zinc lotion of the hospital pharmacopœias is employed, but the tendency of fresh spots to appear is often so marked, he says, that disappointment not infrequently results. He cites one case in which a lotion containing a drachm of glycerin to the ounce acted as an irritant, whereas when the quantity of this ingredient was reduced to ten minims the desired soothing effect was obtained.

Dr. Phillips's method, which he finds of value in securing the necessary calmative action in the type of acne referred to, is as follows: First and foremost no soap is to be used, no matter of what kind, how "pure," or how highly recommended by the medical profession for the complexion. It does not matter that soap appears to be indicated by the greasy appearance of the skin often present in cases of acne; the greasiness is better dealt with by other means. Soap is a skin stimulant or irritant, and its use is entirely out of harmony with a sedative treatment. The use or omission of soap will often determine bad or good results in the treatment of acute or inflamed acne. The "vigorous scrubbing with soap and flannel," the "frequent and energetic washing with soft soap and flannel" recommended by some writers on acne, if necessary at all, he says, are entirely out of place in dealing with anything but the most indolent examples of the disease.

The second item in his method of locally dealing with such cases is to discard lotions, ointments, and pastes entirely and to substitute a dusting powder. The temptation here, he says, is not small to depart somewhat from the immediate subject of the paper to point out arguments defending the common use of face powders, and to ridicule much of what is written in reprobation of the practice, but this parenthetic reference to the matter must suffice.

With regard to the composition of the dusting powder, Dr. Phillips says, any of the usual formulæ may be employed. Recently he has used Southall's dimatos as a basis. This earth is a *Kieselguhr*, consisting of almost pure silica, and is extraordinarily absorbent. Unless much diluted with starch it is, however, better gently rubbed into the skin than dusted on, for, owing to its flocculent character, it adheres better to the surface when smoothly rubbed on. Equal parts of pusol and dimatos form a powder of considerable curative value in the kind of acne cases under consideration, and for most cases such a mixture is of the proper strength to use, although occasionally a case is met with in which the skin is so delicate and sensitive that less pusol must be used. The use of powders, says the author, has the advantage that treatment may be continued through the day as well as by night; for a little powder, the excess of which has been lightly brushed off, is practically invisible. This particular formula effectively removes greasiness from the skin, and improves its general sheen and appearance, while the influence exerted by it on relapsing acne is distinct. In a week or two the disease will be sufficiently quiescent to justify more stimulative therapeutic measures. Here any of the usual sulphur ointments may be employed, but the application should at first be cautious and at intervals only. In most cases a nightly rubbing with a strong sulphur ointment is undesirable, twice a week is better. Dr. Phillips states that he now uses almost exclusively an ointment containing a drachm and a half of pusol to an ounce of vaseline. This is rubbed in at night, while the face is dressed with the above-mentioned powder in the daytime. Together these two prescriptions constitute a cleanly way of treating relapsing acne, and unless the treatment ordered is agreeable to use we may be sure, says Dr. Phillips, that it will not be continued by the patient with that persistence which is essential to success in dealing with a chronic affection like acne.

Original Communications.

THE INSERTION OF AN ARTIFICIAL GLOBE INTO TENON'S CAPSULE,

WITH PRESERVATION OF THE FUNCTION OF THE OCULAR MUSCLES;

AN OPERATION FOR CERTAIN CASES IN WHICH MULES'S METHOD IS INADVISABLE OR IMPRACTICABLE.

(A PRELIMINARY COMMUNICATION.)

By HOWARD McI. MORTON, M. S., M. D.,
MINNEAPOLIS.

During the period of about two years in which a certain group of cases have presented themselves for operative interference, the inadequacy of the measures so far proposed has more and more impressed me. I refer to patients in which we have to deal with a lacerated or atrophic eyeball, and in which the "Mules operation" is not applicable. It had occurred to me in the beginning of the period that complete enucleation of the undesirable and valueless globe, with the immediate substitution of an artificial one, was not alone possible but practicable.

The following case which presented itself to me seemed to clearly indicate the measure spoken of, and I will present its history.

Miss J. C., white, aged twenty-four years, a teacher. When nine months of age she lost the vision in the left eye, the result of a severe inflammation, which she informs me succeeded a cerebro-spinal meningitis. The eye had caused her no annoyance (except from the absolute loss of vision) until February, 1897. At this time it became red and painful. This condition persisted until the time she consulted me. I find a markedly atrophic eyeball, affected with an irido-cyclitis. The right eye had been sensitive to light and photophobic for some weeks. Immediate enucleation of the left eye was clearly indicated. Owing to the degenerated globe, "Mules's operation" was not feasible, so I performed the following operation:

The patient being anæsthetized, a circular incision was made in the conjunctiva close to the corneal limbus. The internal rectus was dissected free from surrounding tissue up to its attachment to the globe, and held by a pair of advancement forceps, after which it was cut close to the sclera. A double needle catgut suture was passed from within outward, inclosing the central bundle of the tendon, and tied on its external surface. The ends of the suture, which are cut to a generous length, are now laid aside to the nasal side of the field of operation. The external, the superior, and the inferior recti are treated in a similar manner. The oblique muscles are cut, and, no suture being used, escape. The globe is removed after section of the nerve, and all capillary hæmorrhage stopped before we proceed. The glass sphere is now placed into the cavity previously occupied by the eyeball, and now lined with the parietal and a portion of the visceral layer of Tenon's capsule. The sutures holding the externus and the internus are now taken by the operator, the assistant taking at the same time the sutures retaining the superior and inferior recti. Before the second turn is made in the sutures held by the operator, the assistant ties his sutures together, and these are inclosed in the final turn of the knot holding the external and internal recti. The sutures are now inclosed in a common knot at their intersection (as shown in Fig. 3). I have attempted to explain this process of tying the sutures in detail, since it is of the most vital importance for two good reasons, as I will now proceed to explain. In the first place, should the sutures slip over the glass sphere (the horizontal up or down, the vertical in or out), it would escape from the cavity as placed, and put all of the strain upon the light silk sutures in the conjunctival wound. The second is, if anything, a more important reason; for, should the suture slip, the normal position of the muscles (as retained by this method) upon the glass ball is disturbed, and a condition of unequal tension results, which destroys the proper movements of the artificial bulb. This is a point in the operation that I desire to lay stress upon—*i. e., the careful adaptation of the sutures, so that the tendons assume the same position they occupied in the living eye.* By attention to this point, which is obtained by the method of tying the sutures, the excursions of the artificial ball are as unrestricted as in "Mules's operation." The muscles are retained in their place by a process of adhesive inflammation to the overlying and surrounding conjunctiva, which is completed before the sutures are absorbed. It must be clearly understood that the tendons are not sutured together, but merely held in a normal position until retained by the inflammatory process. The catgut sutures and sphere are now covered by the conjunctiva, which is held by interrupted sutures of Chinese silk. I dust some finely powdered iodoform into the *cul-de-sac* and apply a bandage, which is allowed to remain for three days. It is interesting to note that the reaction which followed in this operation was very slight and caused the patient no pain or elevation of temperature. The ball was not sensitive, and at the end of three weeks the patient wore the artificial eye with comfort (it was at this time the pictures were taken).

It is not my desire, with the limited experience I have had with this method, to propose it as a substitute for the well-known operation of Mr. Mules, in which the scleral cup, freed from its contents, is retained and utilized as the receptacle for the sphere, but as a method to fulfill two distinct classes of cases in which the "Mules operation" is impossible of application. I refer to (1) cases in which the atrophic ball is obviously unfit for a glass sphere, but in which the power of movement of the muscles (although small they may be) being retained, may be applied to a normal (in size) sphere; and, again (2), in cases where from severe injury the tunics are so badly lacerated that only complete enu-

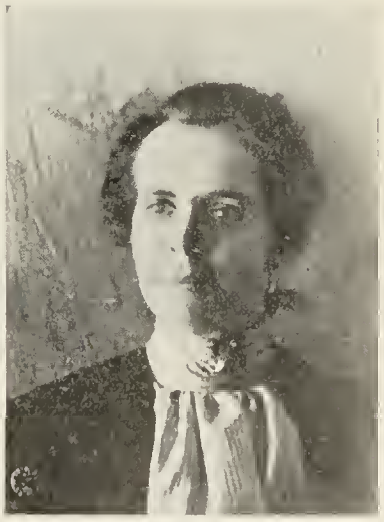


Fig. 1.

cleation is feasible. In these cases it is possible, with care, to search out the four recti and use them as described. There may be other indications that have not attracted my attention. My colleagues in ophthalmology, Dr. Frank Allport, Dr. W. B. Pineo, and Dr. F. C. Todd, as well as a number of others engaged in the field of general surgery in our city who have seen the case, have manifested a generous interest in this operation, and pronounced the result most satisfactory in its cosmetic effects. Dr. Allport, who has for some time manifested much interest in the "Mules operation," calls attention to one point in regard to it, which, I think, will apply as well to this operation —viz., that the artificial ball, holding, as it does, the prothesis closer to the inner canthus and puncta lacrymalis, permits the tears to drain away almost, if not quite, as perfectly as in the normal eye. The recession into the orbit which attends the prothesis inserted after the simple enucleation causes much accumulating of the tears at the inner canthus. A reference to the photographs (see Fig. 1) will give some idea of the natural effect obtained, a naturalness that will increase each week as the artificial eye better adapts itself. I have taken a photograph (Fig. 2) to show how well the artificial eye is supported, since the left superior oculo-orbital sulcus is of equal prominence with the right. The diagrammatic cut (Fig. 3) is presented to show the method of suturing, as well as to indicate the positions of the tendons upon the sphere. Neither before nor during the two years in which I have experimented to satisfy myself of the efficacy of this method have I seen reports of any methods such as described. I am informed as I write this that Dr. Lang, of Moorfields Hospital, followed by Dr. Fox, of Philadelphia, has proposed the insertion of a glass ball under the conjunctiva in cases in which the orbit has been for some time without a globe. In such cases the retention of the muscular function is impossible, and I am as yet unaware that the technique of such an operation as I report, in which the exact and normal action of all the recti is preserved, has been presented.

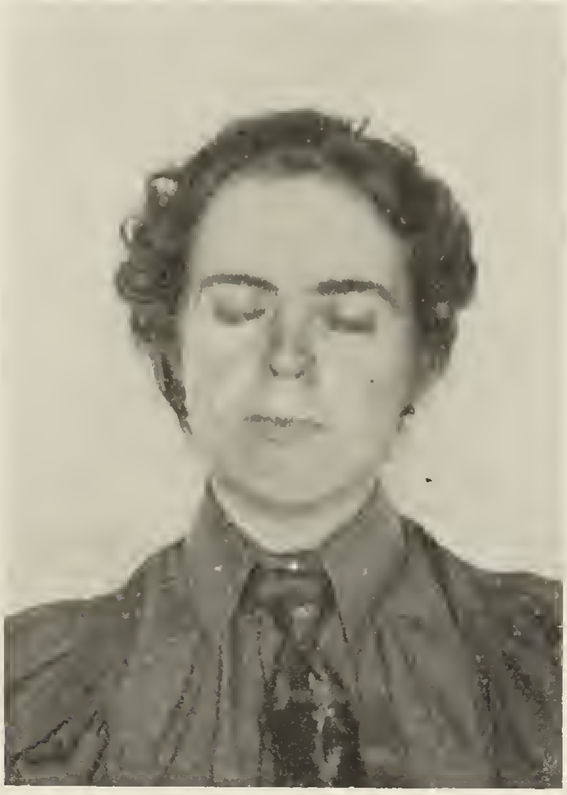


Fig. 2.

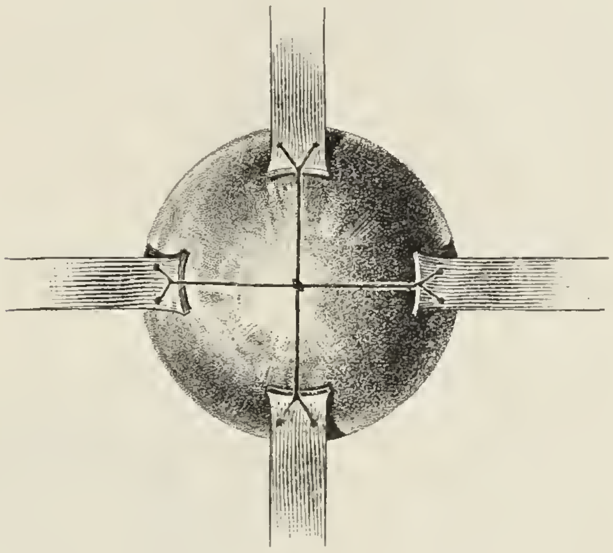


Fig. 3.

504 to 507 Dayton Building.

A NEW BRACE AS AN ADJUNCT IN THE TREATMENT OF SEVERE CASES OF SCOLIOSIS.*

By R. TUNSTALL TAYLOR, B. A., M. D.,
SURGEON TO THE HOSPITAL FOR CRIPPLED AND DEFORMED CHILDREN;
PROFESSOR OF ORTHOPÆDIC SURGERY, WOMAN'S MEDICAL COLLEGE;
DEMONSTRATOR OF ORTHOPÆDIC SURGERY, BALTIMORE MEDICAL COLLEGE;
FELLOW OF THE AMERICAN ORTHOPÆDIC ASSOCIATION, ETC.

It is with some hesitancy that I present this subject to the American Orthopædic Association, knowing as I do the opposition which a few careful, experienced, and eminent orthopædic surgeons, notably Bernard Roth, of London, have expressed to the use of any supporting or correcting brace whatever in the treatment of lateral curvature of the spine.

I have followed the teachings and clinical experience of many others, including our best American and German authorities, and can demonstrate with them the usefulness of a correcting and supporting brace as an adjuvant and reliable help to the other forms of treatment of this condition.

By the other forms of treatment I mean, first, the gymnastic treatment of symmetrical and asymmetrical movements for general muscular development and training and for increasing the spinal flexibility as first suggested by Ling and modified by Roth, the Sayres, and Young, together with suspension, Wirt's swing, dumbbells of moderate weight, pulley weights, etc. Second, the forcible daily corrective treatment by means of such apparatus as that suggested by Hoffa, Schede, Bradford and Brackett, or Weigel, consisting of machines for suspension, overcoming lateral deviation, ligamentous and muscular contractions, and rotation, all at the same time; together with the modified Lorenz "roller" and Zander "rocker" to increase backward and lateral flexibility of the spine.

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* Read by title before the American Orthopædic Association at its eleventh annual meeting.

I will at present deal only, in discussing my subject, with the mechanical treatment by means of braces, but in dismissing the other forms of treatment thus briefly I do not wish to be misunderstood that I do not use them; but, on the contrary, I do use them, or some modification of them, daily on every severe case under my care, and the brace simply as an adjuvant.

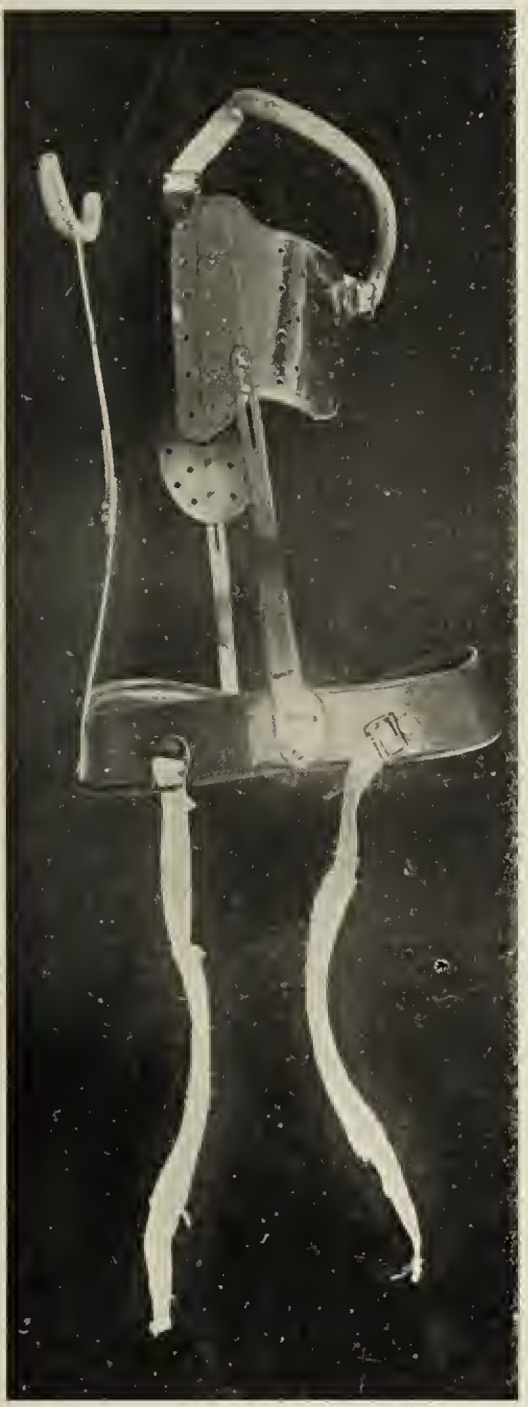

Fig. 1.—Posterior view of the brace.

And further, it seems to me that a brace can only be effectual on a case which has been rendered more or less flexible by exercises and forcible correction if previously "fixed."

In reviewing the literature of braces for lateral curvature, I have found such an array of braces and such claims on the part of the writers that I am forced to omit the consideration of many of the old forms of brace, which are so manifestly ill adapted to meet the requirements of modern treatment from their weight, complicated construction, and costliness, that I will simply consider a few of the more modern braces.

With the Shaffer brace, in the few cases that I have used it, I have not felt convinced that a sufficiently firm base of support or grip on the pelvis was obtained by the webbing straps that surround it, and the difficulty in fitting it perfectly and its cost rendered its applicability limited to that class of cases which were in comfortable circumstances.

The heat of our summers and the warmth of the removable plaster-of-Paris jacket, its limitation of muscular activity, and the necessity of applying a new jacket for every improvement in the curve, has necessitated the employment of this form of support in those of my cases only where economy was an aim, and in cases which seem to have reached a point where little improvement can be effected, and the chief object of treatment is to hold the cases and prevent their getting worse. In cases which are rapidly getting worse and where we must apply some check at once, a plaster jacket put on in suspension, or on my plaster-jacket stool, or in recumbency, I have found useful as a temporary expedient.

Dr. Henry Ling Taylor's lateral curvature brace seems very efficient, but rather complicated from the written description, and I have as yet not used it on any of my cases.

My main reliance for a retentive and corrective support to take up the gain effected by "forcible correction" had been in all of my severer cases the matrix paper and crinoline jacket suggested by Weigel and modified by Bradford, Brackett, and Bartow. It is made over a cast of the patient's trunk, which has been corrected—*i. e.*, so cut down on the convex sides of the curves and built up on the concave as to approach more nearly the contour of a normal body. But this method failed me, owing to the excessive perspiration produced by the intense heat of our Southern summers, which softened the jackets and rendered them useless, notwithstanding several coatings of shellac varnish, air holes, and even re-enforcements of thin steel strips.

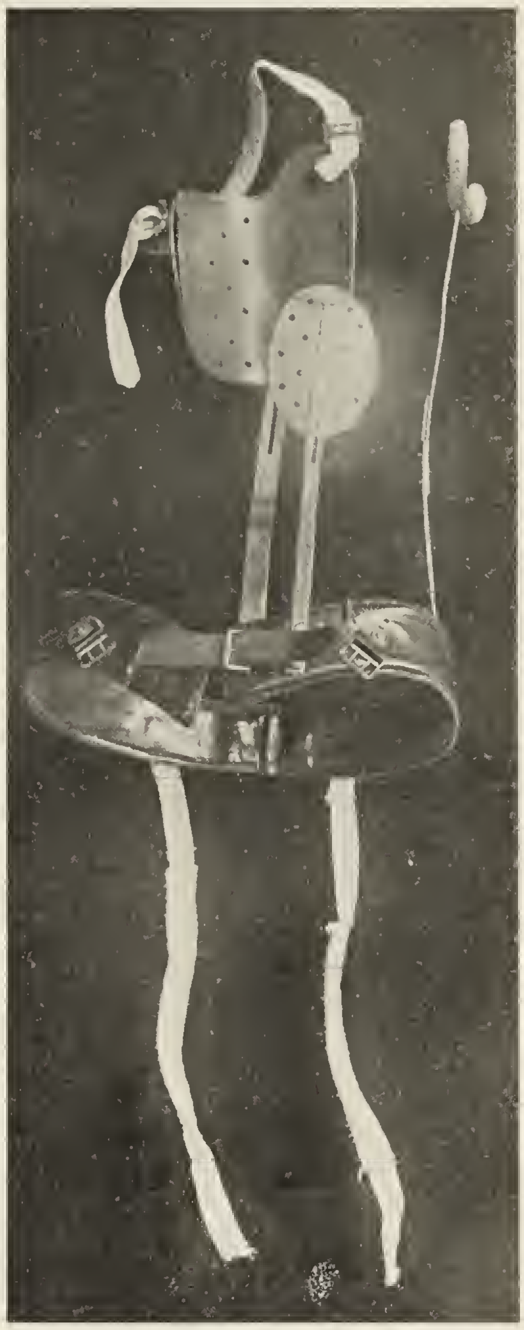

Fig. 2.—Anterior view of the brace.

The correction of the cast and the building up of the successive layers of the jacket require no small outlay of time and personal supervision on the surgeon's part, which is a further objection to this method.

After a series of softened paper jackets had come to my office from several patients, I had made the brace which I wish now to present to you. Its lightness, cheapness, simplicity, coolness, and adaptability to the changes in the shape of the thorax as improvement occurs I trust may commend it, and it has proved quite serviceable to me. I have used it chiefly for dorsal curves, but where lateral deviation has been more marked as a deformity, due to a marked lumbar curve, I have also found it helpful in overcoming this habitual malposition, which must ultimately lead to further osseous, muscular, and ligamentous changes.

My views in regard to these cases are that a patient which assumes a faulty attitude will, notwithstanding daily drill in "posture and exercise," with forcible correction, make more rapid progress with a "reminder" and correcting force on, after leaving the surgeon's office, than one without such support. No surgeon would hope to correct a severe case of bowlegs or knock-knees by daily manipulation and exercises without using some correcting apparatus to be worn in the interim. These seem to me parallel cases.

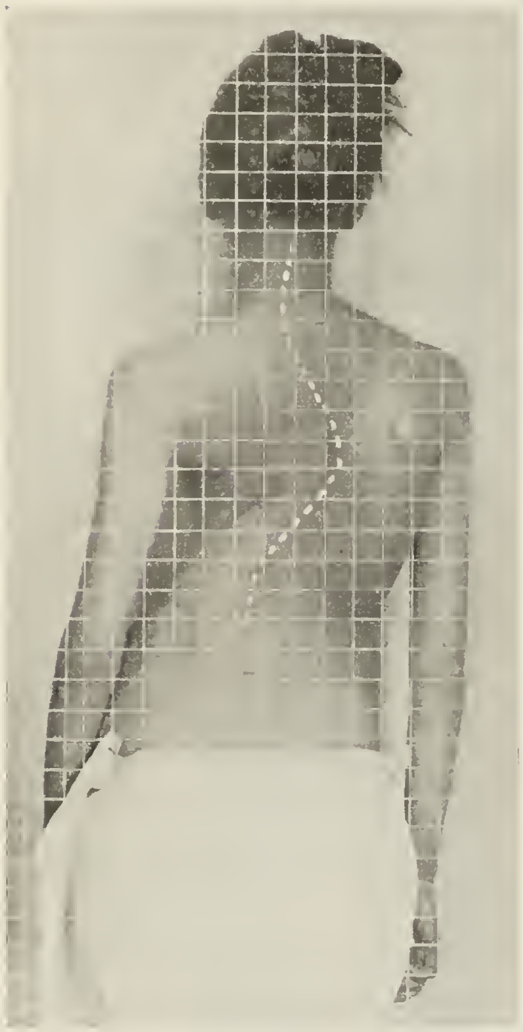

FIG. 3.—A patient, thirteen years old, at the beginning of treatment.

The brace which I now present consists of a rigid steel band which encircles the pelvis at a point a finger's breadth below the crests of the ilia, with a hinge in the middle of the posterior portion and buckling tightly at a corresponding point in front. In order to make this band a fixed foundation for the desired force to act from, it is held in position by a perineal strap on either side. At a point on the pelvic band below and corresponding to the region of most marked rotation and lateral curvature, an upright is projected upward to a point corresponding to the apex of the curve. This upright is fastened to the pelvic band by means of two screws, the lower one being the centre of an arc through which the upright may be moved, and the upper screw may be inserted into any one of several adjacent holes in the pelvic band, depending on the direction it is desired the upright should take. At a point diagonally opposite to this posterior upright, corresponding to the region of the most marked anterior rotation of the ribs, is projected upward an anterior upright similarly attached to the pelvic band. Fastened at the top of the posterior upright by means of a slot in the upright and screws, is a curved plate, somewhat resembling the human hand, which grasps the prominent back and side in the region of most marked deformity.

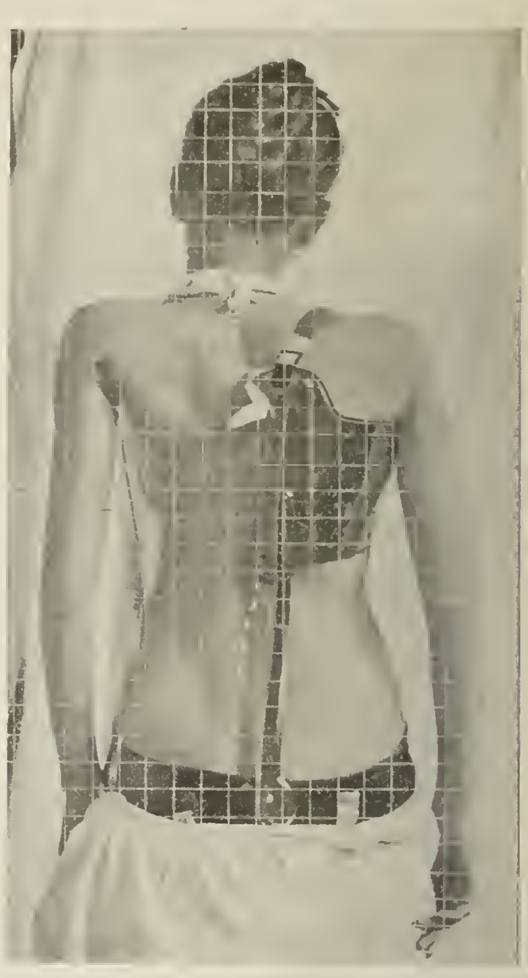

FIG. 4.—The same patient with the brace applied after having been rendered "flexible."

The portion of the plate corresponding to the thumb exerts pressure diagonally forward in the direction somewhat of the posterior third of the ribs against the bodies of the rotated vertebræ. That portion of the plate corresponding to the fingers and palm of the hand passes outward and forward around the prominent side to a point corresponding to the mid-axillary line. Similarly an oval plate with a slot and screw adjustment is attached to the top of the front upright as a point of counterpressure to the back plate, just as the plates are used in the modified Schede forcible correction machine.

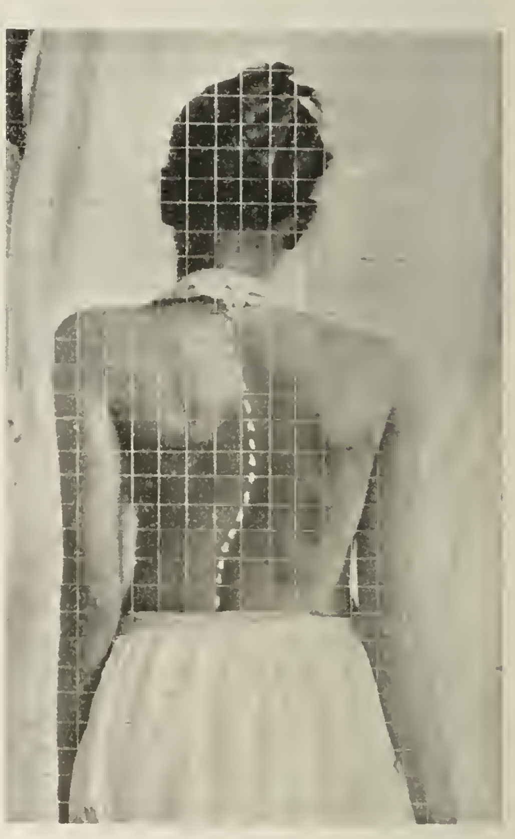

FIG. 5.—The same patient after nine months' treatment.

Thus it will be seen that by adjusting the upper screw in the pelvic band fastening the posterior upright, any desired amount of force may be used through "the fingers" of the plate to overcome the lateral leaning —*i. e.*, the compensatory or secondary lumbar curve.

By means of bending irons quite an amount of diagonal forward force may be imparted to "the thumb" portion of the plate to antagonize the rotation and the primary curve, and this force can be increased at will, depending on the rigidity of the steel upright in the back. Similarly with bending irons the diagonal backward force may be increased by bending the anterior upright.

In the case of double curves two uprights and plates can be used in the back on opposite sides and in different horizontal planes.

In some cases it has proved beneficial to have an axillary strap pass from the tip of the so-called "thumb" around the shoulder to the "fingers" of the posterior plate, especially where the rotated ribs have lifted the inferior angle of the scapula upward and backward. By means of tightening this strap, with the plate high up, force can be exerted against the prominent ribs through the scapula, which, together, give these cases, when viewed from the side, a humpbacked appearance.

Where one shoulder is drooped very much, an axillary crutch may be projected upward from the pelvic band simply as a cosmetic device, for, after all, general appearance and carriage are second only in importance in these cases to actual cure.

I reapply this brace daily and adjust it, after the patient has exercised and has been forcibly corrected, while suspended.

The photographs of one of my cases will, I think, show the improvement following this line of treatment, as well as how the brace is applied and worn. It can not be detected through the clothes and is not complained of as being uncomfortable.

It is worn day and night, as many vicious attitudes may be assumed without it, and the corrective forces are at work constantly with it on. These cases exercise at night without the brace and reapply it in suspension before retiring.

A jury-mast attachment or head support, with a lateral movable joint at the pelvic band, is helpful in partially flexible cases in younger children in removing a portion of the superincumbent weight, which is generally recognized as an ætiological factor in increasing this deformity.

The weight of this brace in its simplest form, when compared with a plaster jacket and a paper jacket, each of which had been worn by one of my patients, showed that it weighed three pounds, while the paper jacket weighed three pounds, and the plaster jacket weighed two pounds and three quarters.

To sum up my views in regard to the rationale of this brace, I can best do so by recalling how we have all observed and inferred that many cases reached a severe grade of deformity by first presenting a lateral deviation and then a secondary rotation, both being increased by the superincumbent weight acting on a spine held habitually out of plumb.

Is it not fair, then, to infer that a reversed process may be possible (where advanced bone distortion has not taken place)—*i. e.*, first prevent any increase in and overcome as far as possible the lateral deviation, and with a certain amount of correcting force the rotation will then be lessened or obliterated?

Such has been my clinical experience with it.

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REPORT OF
CASES OF CHLOROSIS AND ANÆMIA
TREATED WITH
NUCLEO-ALBUMINS AND BONE MARROW,
WITH PHOTOMICROGRAPHS OF THE BLOOD BEFORE AND AFTER TREATMENT; ALSO HINTS ON THE USE OF FLEISCHL'S "HÆMOGLOBINOMETER."

By EPHRAIM D. KLOTS, M. D.

The following cases were treated with "hæmaboloids," a preparation of nucleo-albumin with an extract of bone marrow. In each case the dose received was two tablespoonfuls four times a day, a half hour before meals and at bedtime.

Case I. *Chlorosis.*—Bessie S., aged nineteen years; seamstress. For past four years has been anæmic. From time to time becomes weak and unable to work. Has taken iron in various forms without beneficial results. Has a white, sallow complexion. Appetite poor, especially at breakfast.

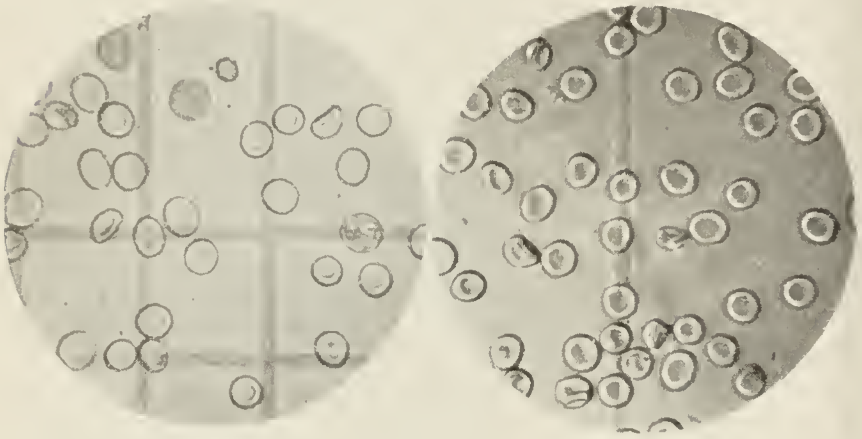


Fig. 1. Case I. Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	54½	2,730,000	117
End of first week...............	57½	3,020,000	119½
End of second week..............	64	3,640,000	121
End of third week...............	70½	4,020,000	123
End of fourth week..............	74	4,210,000	124

There is marked improvement in the general condition. The appetite increased within the first few days of treatment.

Case II. *Chlorosis.*—Agnes G., aged twenty years; servant. For past two years has been weak and sick most of the time. Moderate exertion is followed by dyspnœa and prostration. Three or four days in every week she has profuse nosebleed. Bowels are constipated; marked pallor of face and mucous membranes.

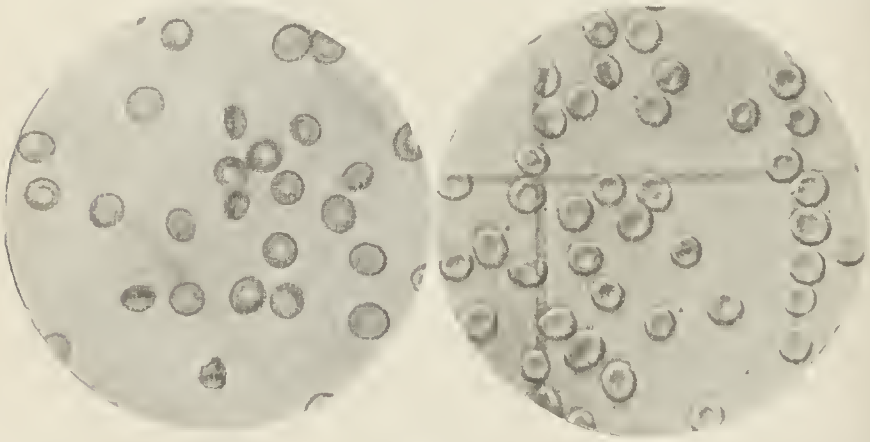


Fig. 1. Case II. Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	43	2,140,000	108
End of first week...............	49½	2,430,000	109
End of second week..............	54½	2,960,000	110½
End of third week...............	60	3,380,000	113
End of fourth week..............	68½	4,020,000	115

After the first ten days of treatment patient ate heartily at every meal. There was no recurrence of nosebleed after the second week.

Case III. *Chlorosis.*—Elizabeth T., aged seventeen years. For a year past has not been feeling well. Menstruation has always been irregular in quantity, sometimes profuse, and sometimes so scanty as to hardly be noticeable. Feels languid and tired most of the time. Appetite is poor, especially at breakfast.

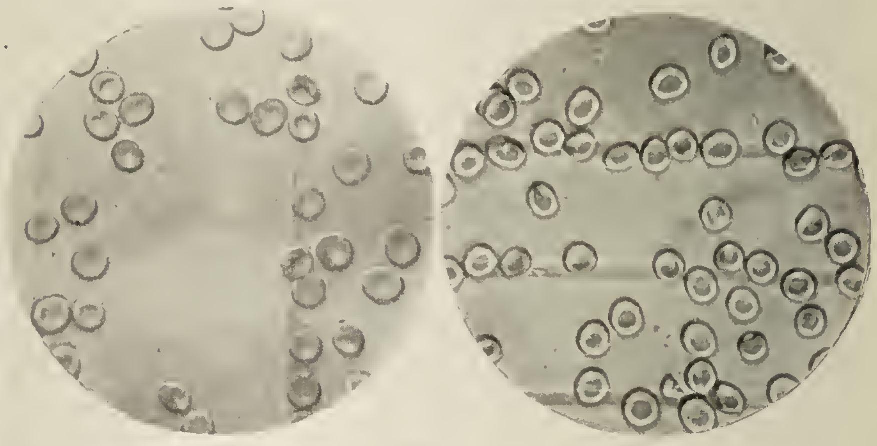


Fig. 1. Case III. Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	51	2,340,000	93
End of first week...............	57	2,710,000	95
End of second week..............	62½	3,050,000	96
End of third week...............	69	3,520,000	98½
End of fourth week..............	75	4,120,000	99

General condition improved. Appetite increased from the beginning.

Case IV. *Chlorosis.*—Mary L., aged sixteen years; housemaid. Until fourteen years of age, lived in a Catholic home. Has always been pale and anæmic. For past six months she has had a severe pain in epigastrium, which was almost constant, but very much exaggerated after eating. Her appetite was poor. Considerable nausea and vomiting.

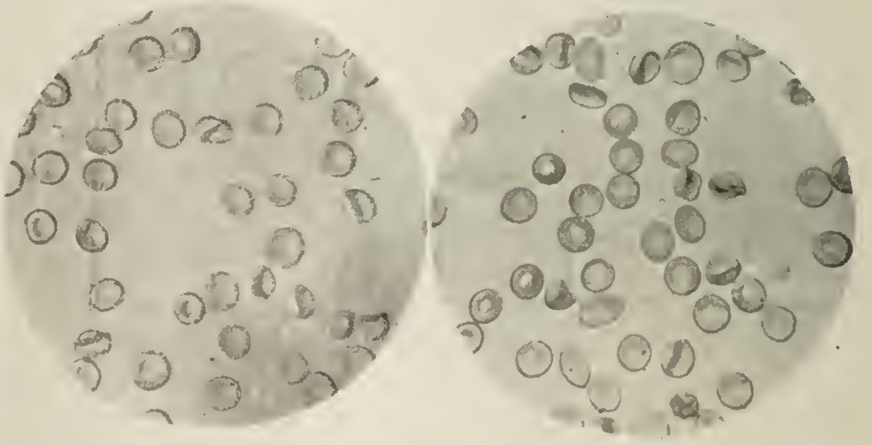


Fig. 1. Case IV. Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	34	2,310,000	104
End of first week................	38½	2,940,000	107
End of second week..............	44	3,210,000	109
End of third week................	53	3,720,000	111
End of fourth week..............	61	3,990,000	113

By the end of the first week the appetite was much improved. After the second week of treatment the pain disappeared and there has been no recurrence.

CASE V. *Chlorosis.*—Annie R., aged nineteen years; tobacco stripper. For past two years has not felt well. At times she became weak and sick without apparent cause, and would be in bed for several days. She has a severe frontal headache most of the time. Bowels are constipated and appetite poor.

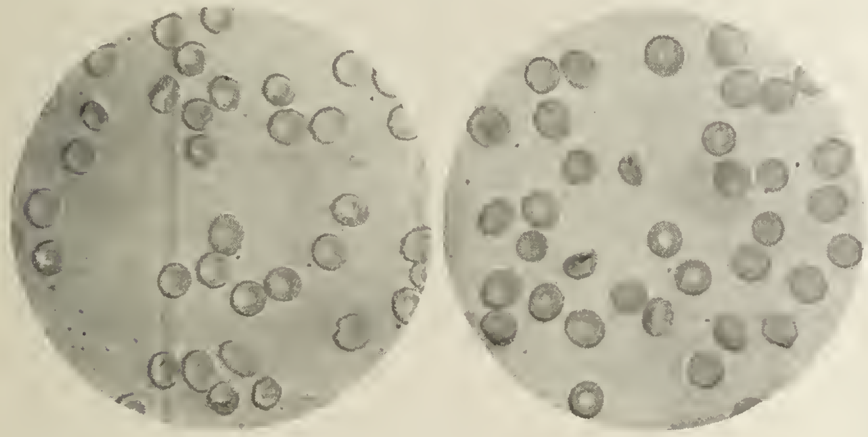


FIG. 1. CASE V. FIG. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	44	2,360,000	117
End of first week................	51	2,910,000	118
End of second week..............	57½	3,180,000	120
End of third week................	66	3,700,000	121
End of fourth week..............	74	4,036,000	123

Bowels have been regular for past ten days. Headache still exists, but not so severe. Appetite improved after the first few days.

CASE VI. *Secondary Anæmia.*—Mr. T., aged thirty-two years; butcher. Seven months ago patient had a severe attack of malaria. The acute manifestations disappeared, but ever since he has been weak, anæmic, extremely nervous, and unable to work. Appetite is poor.

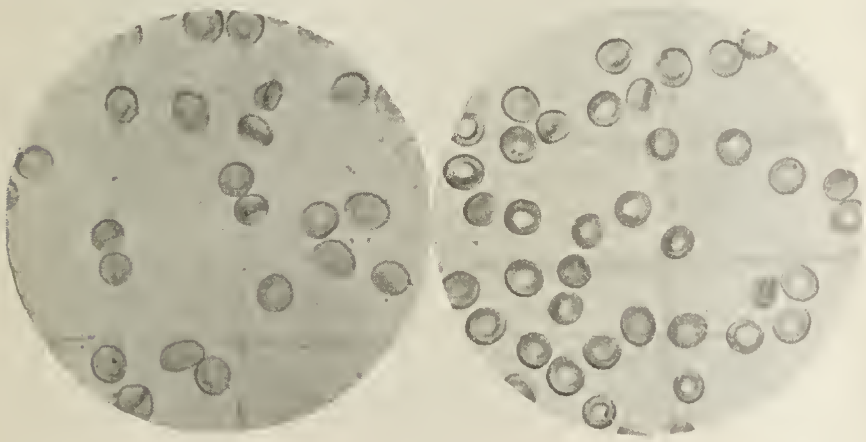


FIG. 1. CASE VI. FIG. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	36	2,140,000	123
End of first week................	45½	2,480,000	125½
End of second week..............	53	3,910,000	127
End of third week................	64	4,280,000	129
End of fourth week..............	71	4,430,000	131

The extreme nervousness disappeared at the end of the second week. The appetite improved almost immediately. The general appearance and condition of the patient is much better.

CASE VII. *Secondary Anæmia.*—Leopold S., aged thirty years. For past four months has not been feeling well. Has had work which was confining and prevented his taking normal amount of sleep. Feels weak and has a poor appetite.

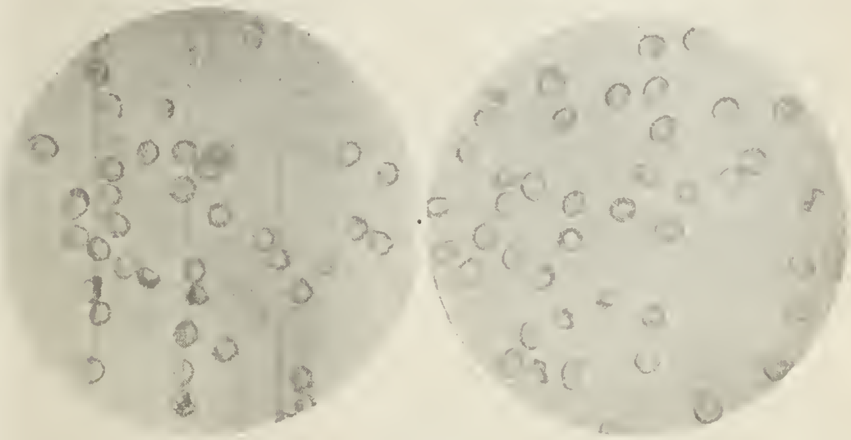


FIG. 1. CASE VII. FIG. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	51	2,420,000	133
End of first week................	53	2,640,000	133
End of second week..............	57	2,730,000	134
End of third week................	59	3,120,000	135½
End of fourth week..............	62	3,320,000	136½

Strength and appetite improved.

CASE VIII. *Secondary Anæmia.*—Sarah D., aged fifty-two years. For years patient has been a sufferer from chronic articular rheumatism. For weeks at a time she has been unable to walk. Anæmia is very pronounced.

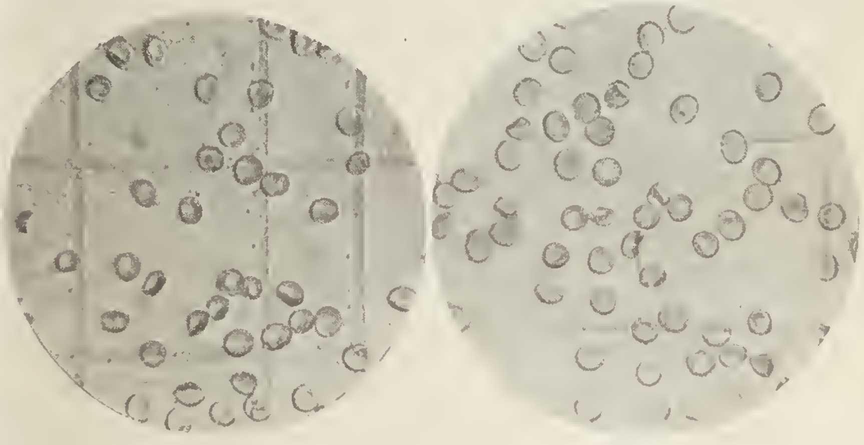


FIG. 1. CASE VIII. FIG. 2.

Appetite and nourishment poor.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment ...	54	2,430,000	111
End of first week	57	2,610,000	111
End of second week	58½	2,900,000	113
End of third week	62	3,230,000	115½
End of fourth week	65½	3,470,000	117

The general condition improved. Gain of flesh and strength well marked.

Case IX. *Secondary Anæmia.*—Mary B., aged forty-seven years. Had a severe attack of bronchitis three months ago, which persisted for several weeks and left her in a weak and anæmic state. She has lost considerable flesh and strength.

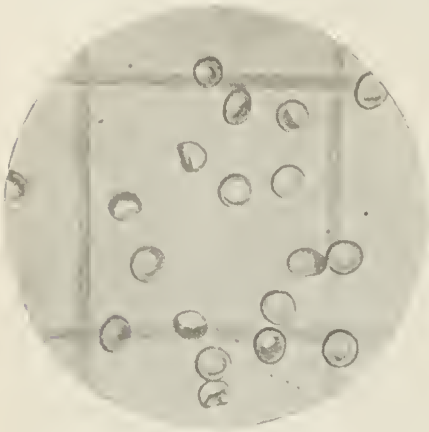


Fig. 1.

Case IX.

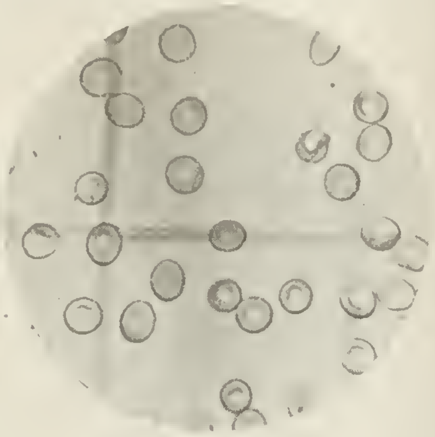


Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	42	2,170,000	141
End of first week	46½	2,540,000	143
End of second week	50	2,740,000	144
End of third week	57½	3,320,000	147
End of fourth week	63	3,940,000	149

Feels stronger. General condition improved.

Case X. *Secondary Anæmia.*—Mrs. S., age thirty-seven years. Patient has not been well since the birth of her last child three years ago. Has had endometritis, with considerable leucorrhœa. This has improved under local treatment. She is weak and anæmic.

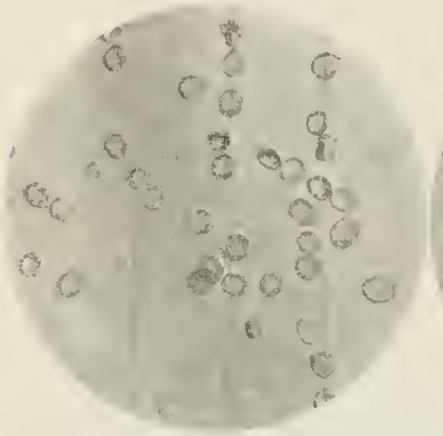


Fig. 1.

Case X.

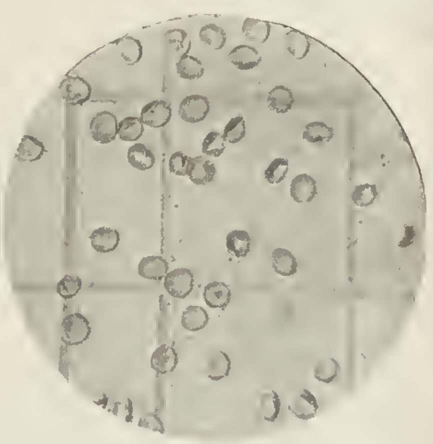


Fig. 2.

	Hæmoglobin.	No. of red blood cells.	Weight.
	Per cent.		Lbs.
At commencement of treatment....	68	3,620,000	122
End of first week	72	3,800,000	123
End of second week	72½	3,740,000	125
End of third week	76	3,820,000	128
End of fourth week	79	4,100,000	129

Gain in flesh and strength well marked.

In calculating the comparative number of red cells the Thoma-Zeiss apparatus was used, and for determining the percentage of hæmoglobin, Fleischl's hæmoglobinometer.

From time to time there has been considerable comment as to the accuracy of the last-named instrument.

The first examination might prove more or less satisfactory, but subsequent examination from the same subject with errors varying ten to fifteen degrees, plus or minus, would be very apt to lead to erroneous deductions as to the value of the therapeutic measure in vogue.

The sources of error described by various authors are as follows:

Difference in the size of the capillary tubes. Imperfect filling of the capillary tube. Lack of uniformity in the size of the cell. The position of the instrument in regard to the light. Error in reading on the part of the operator. Inaccuracy of the scale.

In the examinations made from the cases herein presented the following technique was adopted, and I think the objections mentioned have to a considerable extent been overcome:

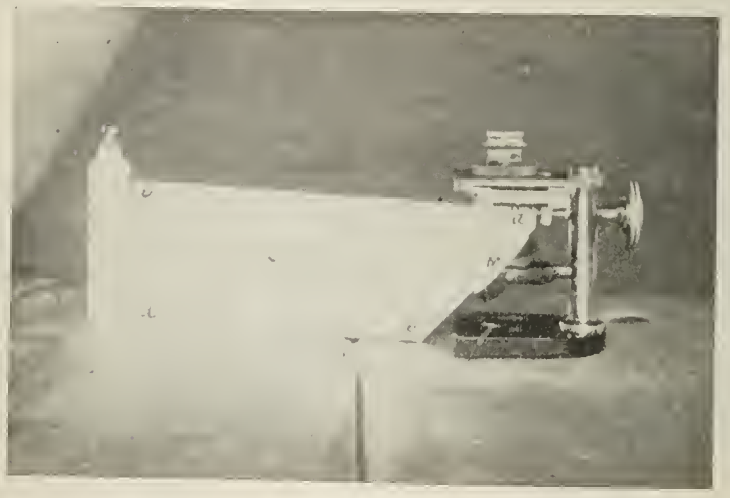
1. The same pipette was used in each case for every examination.

2. When any portion of the blood lifted from the punctured surface protruded over the end of the pipette, it was carefully absorbed with the end of a cotton thread, until the surface of the blood column was flat and corresponded to the ends of the pipette. If the pipette was not completely filled with a convex meniscus it was cleaned and refilled.

3. The *same* semicylindrical half of the cell was used for the blood solution in each examination.

4. The same degree of reflection and intensity of light was adhered to in each re-examination by the following contrivance:

The candle should be placed in an automatic candlestick in which it gives a steady light, the flame always being at the same distance from the table.



The light should then be placed at a suitable distance from the instrument and the reflecting disk tilted to such an angle as to throw a uniform ray through the cell. A piece of board is then cut, as represented by *c* in the accompanying figure—the edge *a b* to correspond to the surface of the tilted disk, M, and the vertical edge, *e d*, the position of the candle. The point of the card at *a* should approximate a screw which is located in the centre of the instrument. The card should be kept for use in all subsequent examinations.

The distance from *a* to *e d*, as measured by the card, will determine a uniform distance from the disk M to the candle.

The angle *e a b* is constant, provided the same card is always used, and the surface of the disk M approximating the cut edge *a b* will invariably be tilted to a uniform angle. The edge of the card *d b* should lie flat on the table and the edge *e d* should be vertical.

If at every examination this card is used to determine the position of the disk and candle, the distance from F to M and the angle of reflection at M will always be uniform.

5. Each examination for determining the percentage of hæmoglobin was verified by two or more observers.

156 West Forty-eighth Street.

THE RECTUM

CONSIDERED AS A RECEPTACLE FOR THE GRADUAL ACCUMULATION AND TEMPORARY RETENTION OF THE EXCREMENTAL MATTER.

By WILLIAM BODENHAMER, M.D., LL.D.,
NEW ROCHELLE, N. Y.

A number of years ago the writer offered some arguments in favor of considering the rectum as a receptacle for the temporary lodgment of the fæcal dejections, in opposition to the theory of Mr. O'Beirne, that "the rectum is not a receptacle for the fæcal matter, neither was it so designed." The writer will, therefore, on the present occasion, endeavor to present some additional arguments in favor of upholding the opposing theory—namely, that the rectum is a receiving reservoir for the temporary retention of the fæcal matter, and was so designed. Some may think that this subject is unworthy of their attention, and so pass it by; but no subject should be considered undeserving of anxious thought which has for its object the improvement of the healing art or the extension of our knowledge of Nature's operations, for the axiom "*Vita brevis, ars longa*" is just as true now as it was in the days of Hippocrates.

Now, Mr. O'Beirne's theory is both novel and curious, and is presented to us in an imposing and impressive manner, but it should not on that account be taken for granted as true, but be subjected to a rigid scrutiny.

As a preliminary to the investigation of this subject, it is necessary to consider briefly the form of the rectum, its position or situation in the pelvis, its direction, its relations, its capacity, its length, and its peculiar structure, as well as the effect of its structure upon the accumulation of fæcal matter in its cavity.

Form.—The form of the rectum at its commencement, like that of the sigmoid flexure of the colon, with which it is continuous, is cylindrical, and it maintains this form throughout a considerable portion of its extent; but toward its inferior extremity it becomes large and saccated, forming a terminal pouch, which is dilated and flattened from before backward, and the mouth of which is closed by the internal sphincter ani, like a purse. This dilatation, or ampulla, in consequence of the peculiar organization of the parts, is capable of acquiring great size, and in some instances of long-continued retention of fæces it has been found to occupy a very large portion of the cavity of the pelvis. Now, the question may here be asked, What was this rectal pouch or ampulla, which all anatomists admit exists, and is normal and constant, designed for, if not for the temporary lodgment of the fæcal matter previous to its final exit from the body? What other use can it possibly subserve?

Structure.—The structure of the rectum, like that of other hollow viscera of the abdomen, is composed of three regular tunics—a serous, or peritoneal, a muscular, and a mucous—which are intimately blended and united to each other by cellular tissue. This connecting tissue has been considered by some anatomists as an additional coat of the rectum, thus making this organ to consist of four tunics, instead of three, and this tissue they have severally denominated cellular, submucous, and nervous. Be this as it may, however, it is nevertheless most certainly the connective tissue between the peritoneal and muscular, and between this last and the mucous coat, and may be regarded as constituting the framework of the rectum.

As regards the structure of the rectum, its several coats are gifted with peculiar functions in health, and, when under the influence of disease, each is subjected to peculiar affections. The muscular coat of the rectum especially possesses great interest, for in this coat resides its contractile power, and to this coat is it indebted for its properties, both as a retentive and as an expulsive organ. The muscular coat is composed of longitudinal and of circular fibres, the disposition or distribution of which merits the careful study of the physiologist. The peculiar arrangement of the longitudinal and the circular fibres of the rectum, which differs essentially from that of any other portion of the intestinal canal, has furnished this organ with the power, to a certain extent, of retaining and controlling its contents. The longitudinal fibres are larger and stronger in the superior portion of the rectum, especially anteriorly and posteriorly, and they become smaller and weaker as they approach the internal sphincter ani. By this change or alteration in the arrangement of these fibres the rectum is enabled in its inferior portion or pouch to retain a larger quantity of fæcal matter. The circular fibres, on the contrary, are smaller, fewer in number, and more feeble in the superior portion of the rectum, where they are less needed, and where the action of the abdominal muscles is sufficient to propel the contents of this intestine downward. As the circular fibres, however, approach the inferior portion of the rectum, they become more numerous and strong where they are most needed; and are finally aggregated as a band and constitute the internal sphincter ani. The force exerted by the abdominal muscles in the act of defæcation is chiefly expended upon the superior part of the rectum, where the antagonists, the circular fibres, are weakest, and it is exactly in the same ratio in which this force diminishes in the inferior portion of the rectum that the contractile power of the circular fibres in this situation increases. All these are anatomical and physiological facts, which can not be controverted, and must not be ignored in the consideration of this subject.

The mucous coat of the rectum from its peculiar structure is well adapted for the passage over it of extraneous bodies. It is studded with numerous mucous glands or follicles, from which is derived the mucilaginous fluid which so abundantly lubricates its interior surface as to facilitate the passage of the fæces, and at the same time to protect itself from mechanical violence. Without this secretion of mucus, or some such lubricating substance, it would be almost impossible for the fæces to be expelled.

The rectum, therefore, being composed of membranous and muscular tissue, is by the first well fitted both to yield and to expand to a gradual and gentle distending force, so as to form a perfect recipient reservoir for fæcal matter; while the latter is well fitted by its contractile power to obliterate the cavity of the organ and forcibly eject its contents. This musculo-membranous viscus then demands attention, not only as to its structure, but also as to its situation, form, direction, relations, and connections. The form and direction of the rectum, as well as the structure of its several coats, and its peculiar muscular equipment, as a receptive, retentive, and expulsive organ display a most admirable provision of Nature to enable it to perform its numerous offices; indeed, its entire anatomical arrangement evinces a design far beyond human ingenuity.

The utility of the direction of the rectum will at once appear evident when we take into consideration that had this organ been *straight*, as its false name implies, we should have been constantly subjected to the unpleasant annoyance, especially when in the erect posture, of a disposition to empty it; its peculiar direction and formation, however, happily protect us against this; and furthermore the pouch located at its inferior extremity, allowing a large accumulation of fæcal matter to collect, gives sufficient time to the absorbents or the lymphatics of the part to take up any nutritive particles that might still remain in the fæcal mass, for it can not be denied that the rectum is more or less capable of digestion like the stomach, which is the primary reservoir. It is true that some authors have declared that there is no digestion whatever in the rectum or in the colon; hence, nutritive enemata are useless when addressed to them; yet, strange, some of these very authors themselves recommend nutritious elements, injected hypodermically, with the view to their being digested under the skin. It is true that digestion is not the special function of the rectum or colon, like that of the stomach and small intestines, but that more or less digestion in a feebler manner does take place in them can not be successfully denied. Whether such process should be called digestion, absorption, or imbibition matters not, as the effect upon the system is the same. Indeed, rectocolonic alimentation, or the capacity possessed by the rectum and colon for digesting aliment, when properly prepared and introduced into them, is a problem not only of great interest to physiologists, but of far greater interest and importance to the medical practitioner. As regards the pouch of the rectum, precisely the same kind of ampulla or enlargement obtains in all hollow viscera of this character at such particular parts of them which have normal contractions below them. In this instance the anal sphincters are the contractors and form the impediment to the further progress of the fæcal matter for the time being. Indeed, the rectum, like the stomach, the bladder, and the uterus, has the power or faculty of retaining, controlling, and expelling its contents, and is endowed, like them, with much sensibility in its functions of contraction and relaxation. As regards the stomach, the pylorus, or contractile orifice at the lower or distal end of it, is not of the nature of a valve, as some have termed it, but is a true sphincter like that of the anus.

To the rectum, then, and especially to its capacious pouch, belongs the office of reception, accumulation, and retention of the fæces, while to the anal sphincters, like sentinels, belong the office of opposing their exit for the time being, and finally of giving permission, and of aiding in their expulsion. The rectum may, therefore, with great propriety, be denominated the *terminal depot* of the alimentary canal. Indeed, it is the natural depot of the excremental matter just previous to its final discharge from the body; except the parts are under the influence of certain diseases, such as dysentery, diarrhœa, cholera, etc., when such morbid fæces will not be tolerated in the organ for a moment, but will be expelled as soon as the smallest portion presents itself in it.

Now, the writer is firmly of the belief that by the foregoing observations he has plainly demonstrated the fact that the pouch of the rectum in the adult, by its peculiar organization, location, and equipment, both muscular and nervous, is a most suitable reservoir, designed by Nature for the reception and the temporary retention of the fæces just previous to their final exit from the body.

Does the Rectal Pouch exist in Early Infancy?—It must be observed here that upon the subject of the non-existence of the pouch, or ampulla, of the rectum in early infancy Mr. Colles says: "It is much more evident in adults than in children; however, it will be found in children, except in those of one or two years" (*A Treatise on Surgical Anatomy*, p. 137, 8vo, Philadelphia, 1831).

A number of years ago the writer examined, post mortem, the rectum and colon of several infants, their ages varying from five to twelve months, and in each case he found these organs were not developed beyond the common calibre of the small intestines. No dilatation of the rectum toward its inferior extremity, indicating its pouch, could be observed in any of these subjects. The rectal ampulla evidently does not exist in early infancy, but it is subsequently gradually developed, and obviously begins to manifest itself as the act of defæcation comes under the influence of the will, for it is then that the dejections become much less frequent, the fæces increase both in quantity and in consistency, and are suffered to accumulate for a length of time, or until they provoke by their presence the expulsive movement. In early childhood defæcation is principally reflex, but it gradually becomes voluntary by habit. It may be observed here that the frequency and the fluidity of the fæcal discharges in early infancy may, to a considerable extent, be owing to the lessened calibre or diameter of the large intestines, as before stated. This frequency, too, may in some respects be owing to the digestion of infants being much more rapid, the intestinal secretions more profuse, the fæces much more fluid, and the sensibility of the intestinal canal much greater. It may also in a great degree depend upon the fact that in early infancy the rectum is wholly uninfluenced by the will.

It must now be observed, however, that the able and distinguished physiologist, Mr. O'Beirne, of Dublin, in 1833, as is well known, positively denied that the rectum, or any part of it, was a receptacle for the temporary lodgment of the fæces. He maintained that the sigmoid flexure of the colon was the receptacle for the fæcal matter, while accumulating in sufficient quantity to furnish a proper stool; that in health the whole rectum was always empty of fæces, except at the moment of evacuation, when they were passing rapidly through it; that the only function of the rectum was simply the medium of conveying the fæces from the colonic receptacle out of the body; and that the part of the rectum intervening between the colon and the rectal pouch was not only always empty, but firmly contracted by the circular muscular fibres (*New Views of the Process of Defæcation*, pp. 3 *et seq.*, 8vo, Dublin, 1833).

Now, with regard to Mr. O'Beirne's very plausible and very ingenious theory, so ably presented by him, the writer almost regrets that he has respectfully to beg leave to dissent from so many of its postulates—for instance, he can not agree with Mr. O'Beirne that the sigmoid flexure of the colon is a receptacle for the accumulation and detention of the alvine excretions. Neither can he agree with him that the rectum, which is from eight to ten inches in length, is the mere passage or conduit for the rapid transmission of the fæces from his colonic receptable out of the body; or the mere faucet to draw them off from the same, when called into requisition. It will, however, be shown hereafter that this theory degrades this richly endowed and equipped organ by depriving it of its most important and essential functions and by converting it into a mere sewer or drain for the elimination of the residuum of digestion.

The Rectum and Œsophagus compared.—Mr. O'Beirne compares the rectum to the œsophagus, declaring that they are both straight, and of about the same length, and both are always empty and contracted, except just at the time when the fæcal mass is passing down through the former and out of the body, and the alimental mass is passing down through the latter into the stomach; and that their function is precisely the same—namely, that of a mere conduit for rapidly conveying material either into or out of the body. But the difference between these two organs does by no means justify the comparison, for the rectum is not straight like the œsophagus, as its false and absurd name implies, and in consequence of its three main curvatures and its pouch healthy consistent fæcal matter does not pass through it without stopping, as aliment does through the œsophagus. There is no part of the rectum straight, except the two inches below its pouch and termination, and it is only through this short portion that the fæces are rapidly passed out of it by the aid of the anal sphincters. Indeed, a *straight rectum*, like the œsophagus, is absolutely essential to Mr. O'Beirne's theory. The writer will hereafter show that the rectum in health is never entirely empty and firmly contracted, as the œsophagus is, when at rest.

And, furthermore, Mr. O'Beirne declares that the fæces are arrested, detained, and accumulate in the sigmoid flexure of the colon as a receptacle; but he does not tell us plainly by what power or force they were brought there, what arrested and detained them there, and by what force or action they were moved out of his colonic receptacle. These are exceedingly interesting questions, and the subjects of them should have been plainly set forth by Mr. O'Beirne, whose idea, however, of the peristaltic action is anything but clear, for he seems to reject almost entirely such action in any part of the colon, but he distinctly admits in one passage of his treatise the existence of this action in the small intestines; and in another passage, when accounting for stercoraceous vomiting, supposes that in that case the action is inverted or antiperistaltic. Now, in the opinion of the writer, the fæces enter in and pass out of the coiled portion of the colon by the same force or action, and in the same manner, which govern their movement in all the portions of the intestinal canal above the rectal pouch—namely, by the automatic or peristaltic action alone. Indeed, it must be distinctly understood that the fæces in passing through the sigmoid flexure of the colon, which is under the ganglionic system of nerves, are entirely governed in their movements, as already stated, by the peristaltic action, as they are in all the parts of the intestinal canal not immediately under the influence of the will. The fæces can neither be arrested nor detained in the colonic receptacle, in consequence of the entire absence of a true sphincter or sphincters to guard, to arrest, to detain, and finally to expel them; such, however, are the anal sphincters below the rectal pouch. The writer will admit, however, that a slight *remora* of the fæcal contents takes place in the caput coli and in the sigmoid flexure of the colon, but this slight hindrance or restraint is obviously owing to the peculiar form, position, and direction of these two portions of the colon, and not to any sphincter or constrictor. The fæces in the caput coli and in the coiled portions of the colon are, therefore, for these obvious reasons, slower and longer in passing these points than they are in passing the transverse and the descending portions of the colon. But these facts do not constitute the caput coli and the sigmoid flexure of the colon receptacles for the accumulation and detention of the fæces.

Is the Rectum always Empty?—The writer will here notice the claim of Mr. O'Beirne that the rectum is always empty of fæces and gases and firmly closed (*op. cit.*, pp. 4, 5). The writer, on the contrary, however, is firmly of the belief that the rectum in health is never entirely empty, but always contains some healthy fæces in some part of it. He holds that even immediately after a natural evacuation of the rectum there is still more or less consistent excrement left in the superior portion of it; indeed, it is more in the character of a displacement merely of the fæcal matter of the inferior part of the rectum, in the ordinary calls of Nature in healthy persons, than by a complete evacuation of the whole contents of the organ; for it must be observed that besides the contractile power of this part itself the *vis a tergo* of the consistent natural excrement also powerfully aids in effecting a dislodgment or stool. When the rectum is completely emptied by an active cathartic or stimulating enema, or as in some diseases—such as dysentery, diarrhœa—the *vis a tergo* is for a time absent, and in a person of good health it requires from two to three days to re-establish it, by the rectum becoming moderately repleted again, so as to make provision for this part of the natural mechanism, by which the consistent fæcal matter is ordinarily discharged. The rectum then, which was designed by Nature to serve the place of a reservoir, is never entirely empty, when in its normal and healthy state, but always contains some fæcal matter in some part of it; and it is the inferior portion only that is generally evacuated when naturally called to perform this act. Indeed, the writer positively affirms that the rectum can not always be empty, and good health maintained, any more than can be a too frequently empty stomach.

In the exercise of his profession, during a practice of many years, the writer has examined the rectum in numerous instances, some with special reference to this very question, and he has scarcely ever failed to discover more or less fæcal matter in some part of it. If the rectum is examined a day after an evacuation, the fæcal accumulation during that period will generally be found lodged a little beyond the superior margin of the internal sphincter ani, about four or five inches above the verge of the anus. With this intention he has examined the rectum in the same individual as often as two or three times in the day; and for this purpose he uses a bivalve speculum ani, introduces it fairly above the internal sphincter, opens it sufficiently, and then through its open blades passes up a No. 2 or 3 English rectal bougie to the superior end of the rectum and withdraws it, and if it has come in contact with fæcal matter some of it will adhere to the bougie and can be plainly perceived. He has, in some instances, found that the bougie could scarcely be pushed up through the column of solid excrement, which had evidently been lodged in the rectum many hours. This condition of the solid excrement found in the rectum the writer has observed to be more common in females than in males; this, however, is said not to be the experience of gynæcologists generally, who now, more than ever before, very properly employ the rectum for diagnostic purposes. The writer, however, who has examined the rectum in both sexes in so many instances, during an active practice of fifty-seven years, can not agree with the author, who says that "gynæcologists, by their daily examinations in the vagina, are quite familiar with the fact that the *rectums*, even of women of torpid habits, are comparatively seldom found loaded with fæces, but empty and flattened between the vagina and the sacrum."

The writer would observe here that if the examination of the rectum is made an hour before the usual diurnal evacuation, the fæcal mass may often be detected, even by the finger in ano. In the dead body he has never found the rectum entirely empty.

Mr. O'Beirne, in accordance with his theory, has too frequently been compelled to assume as probable phenomena which do not admit of positive or of demonstrative proof—for instance, his conception of the manner in which the fæces are unloaded from or emptied out of the sigmoid flexure of the colon into the rectum is, in the opinion of the writer, purely hypothetical; he therefore believes that many of his views on this subject are theoretically wrong.

The writer wishes particularly to repeat here that the healthy fæces do not pass out of the coiled portion of the colon into the superior portion of the rectum in any manner different or peculiar from that which obtains in any of the other parts of the intestinal canal, except the rectal pouch, which is under the influence of the will; neither are the fæces moved out of the coiled portion of the colon by any other force or motive power than peristalsis. The peristaltic movement occurs in waves, from above downward, forcing the fæces in the same direction, toward the rectal pouch, where it terminates. This peculiar movement is not continuous, but is intermittent, for whenever any part of the intestinal canal is empty peristalsis is quiescent in that part, and it is only brought into action by the stimulus imparted to it by the approach and presence of fæces, enemata, or gas. The fæces do not pass out of the sigmoid flexure at once in size sufficient for one ordinary stool, the result of one day's accumulation, as Mr. O'Beirne declares, but pass into the rectum at intervals in small portions, each portion being the fæcal residue of but one meal of the solid ingesta of the stomach. As each successive portion is received in the superior part of the rectum, the former one is propelled forward by the impulse given it from behind, assisted by the contractile or vermicular power of the part itself, until it eventually arrives at the pouch of the rectum, where it, and the portions that follow in the same manner, slowly accumulate, assume shape and figure, and gradually and gently distend the organ. As a general rule, the excrementitial residue of one day's aliment taken into the stomach and amassed in the rectum is sufficient to provoke the expulsive movement. Analogy shows that Nature employs a similar agency in the case of other hollow organs possessing sphincter muscles, such as the bladder and the uterus, which are excited to contract and expel by the quantity, not the quality, of their contents.

Mr. O'Beirne, being constantly confronted by the fact that between the periods of defæcation fæces were found in the rectum, which he had declared to be always empty and firmly contracted, was, of course, compelled to notice this, to him, singular circumstance, and to account for this very puzzling phenomenon. This he does by attributing it entirely to morbid phenomena, and admitting that by such even the rectum itself may become the final reservoir of the fæces, instead of the sigmoid flexure of the colon. He says that this result may be brought about when the whole of the rectum, together with the sphincters, is rendered paralytic. He is quite safe in making this very liberal admission, for it is well known that injuries of the brain and spinal marrow may and do result in paralysis, not only of the rectum, but sometimes of the colon, as well as of other portions of the intestinal canal, thus converting such portions, for obvious reasons, into reservoirs or stopping places for the fæces. In compression of the brain the external sphincter ani is almost entirely disabled, and in compression of the cord the power of the internal sphincter ani is also impaired. A morbid condition of the rectum, however, in a modified degree, may be produced by atony of its walls, and perhaps this is what Mr. O'Beirne means by the use of the word *paralytic* debility or loss of tone. The rectum, like all other hollow viscera, is subject to paralysis from injuries of the brain and spinal marrow, as has already been observed, or to atony from undue distention of its parietes, by impacted fæces, by gas, or by both, as well as from other causes. But the question here is not what the rectum may become by disease—such as paralysis, spasmodic or organic stricture, atony, etc.—but is the rectum naturally and in health a true receptacle for fæces? That is the question; for it must be distinctly understood in this affair that whatever is said concerning the rectum and its functions or actions, both directly and indirectly, must have reference only to its healthy or normal, and not to its morbid or abnormal, condition. Now, this is a very ingenious device of Mr. O'Beirne's to dispose at once of the perplexing difficulty of finding fæcal matter in the rectum at any time, by stating that the organ, whenever this occurs, is in a state of paralysis or atony, and unable to expel the fæces when they reach it.

Dr. George J. Cook, of Indianapolis, Indiana, an admirer of Mr. O'Beirne's, and a very able advocate of his theory, some years ago, after first declaring that the sigmoid flexure of the colon was the proper receptacle for the fæces, proceeded to account for the puzzling phenomenon of finding fæcal matter in the rectum between the periods of defæcation. He declares that whenever fæces are thus found lodged in the rectum it is entirely owing to atony of the walls of this organ, by which it is incapacitated or indisposed to forward on through it at once, without stoppage, the contents of the sigmoid flexure; hence fæces are permitted to accumulate in it. The atony of the rectum is caused, says he, by the repeated neglect of the calls of Nature, by which the rectum is gradually educated to tolerate in its cavity that which is really irritating to it, and it is only the educated or atonied rectum that ever contains fæces between the periods of defæcation (*Philadelphia Medical Times*, November 18, 1882, p. 582).

The assertion of Dr. Cook, like that of Mr. O'Beirne, is that the rectum in its healthy state is always empty between the periods of defæcation; and that this being its normal condition, it can not therefore be a natural reservoir for fæcal deposits; but by pernicious education, which he explains, this very susceptible organ may be taught to tolerate in its naturally empty, sensitive, and contracted cavity the presence and the lodgment of fæcal matter, and thus finally become that which was not designed by Nature—namely, an artificial depot for excrement. The whole argument of Dr. Cook is to prove that the rectum can be converted artificially into a fæcal receptacle by education, as if that was the question at issue, but not a single argument does he give to prove that the uneducated rectum is not normally such a receptacle. This it behooved him to do first, and afterward to account for the fact of fæcal matter being found in the cavity of the rectum. The writer maintains that the rectum is naturally the terminal depot, or last resting place, for the healthy excremental matter previous to its final exit from the body; and that it tolerates such there for a certain period without being especially educated to do so, for that is its normal function. This is proved by its anatomical structure, by its peculiar nervous endowment, and by the fact that more or less healthy excrement will always be found in some part of the cavity of a normal and healthy rectum. This, indeed, is the rule; the reverse of this is the exception. The writer will admit as true that by the repeated neglect to respond to the daily calls of Nature to empty the sound rectum atony of this organ from repletion is apt to result, by which its sensibility is blunted and its contractile power more or less diminished, this morbid condition being, of course, greatly aggravated by the repletion, irritation, and excessive distention which follow. But this morbid state of the rectum, by whatever cause produced, is no evidence whatever that it is not a natural receptacle for the fæcal excrement. Dr. Cook further says that when the expulsion of the fæces is voluntarily resisted for a length of time, a reversed or antiperistaltic action takes place, and the fæces are returned by the rectum to the sigmoid flexure of the colon, whence they came.

Dr. J. N. Baughman, of Flat Lick, Kentucky, a recent advocate, too, of Mr. O'Beirne's theory, when speaking on this particular part of it, also says that "The fæcal mass is retained in the sigmoid flexure until certain periods, when it descends into the rectum when there is a desire to go to stool; and when the desire is not gratified, the mass of fæces is lifted back into the sigmoid, where it remains until another desire for defæcation, and even if the desire of evacuating the bowels is gratified, and not all the fæces expelled from the rectum, the remaining portion is lifted back into the sigmoid, where it remains" (*Mathews's Medical Quarterly* for October, 1895, p. 313).

All that the writer will say of Dr. Baughman's lucid description is that it is truly delicious in its *naïveté*.

(*To be concluded.*)

The New York Obstetrical Society.—At the recent annual meeting officers for the ensuing year were elected as follows: President, Dr. W. Gill Wylie; vice-presidents, Dr. J. C. Edgar and Dr. A. M. Jacobus; recording secretary, Dr. Le Roy Brunn; assistant recording secretary, Dr. George W. Jarman; corresponding secretary, Dr. E. B. Cragin; treasurer, Dr. J. Lee Morrill; pathologist, Dr. George C. Freeborn.

THE FREQUENCY OF
GONORRHŒA IN MARRIED WOMEN.

By GEORGE G. VAN SCHAICK, M. D.,
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Since Noeggerath aroused the incredulity of most members of the medical profession by stating that a very large number of cases of ovarian and tubal disease were due to gonorrhœal infection, bacteriological science has shown us how accurate his conclusions were. We know that gonorrhœa is a frequent disease in all stations of life, that it affects a large number of women, and that its consequences are much more disastrous, in a large number of instances, than was formerly thought to be the case.

With reference to this subject the writer, three years ago, thought it would be of interest to discover how frequently married women complaining of vaginal discharges were actually suffering from gonorrhœal infection, as evidenced by the presence of the Neisser's gonococcus.

The investigations carried out for this purpose bear only upon women examined in the office, and therefore generally belonging to more or less prosperous social strata. They do not include cases seen in unmarried women, since, in this class, any sexual intercourse was naturally illicit, nor do they include examinations made of ovaries and tubes removed from patients operated on at their houses or in hospital and not first seen in the office.

In the majority of instances the examination was made by gently scraping the vaginal rugæ, the posterior *cul-de-sac*, and the labial folds with a curette that had previously been passed through the flame of an alcohol lamp. If any discharge was actually present some of this was employed. The material was placed between two very thin cover glasses, and smear stains were made as soon after the patient left as possible. The staining in every instance was made with methylene blue, which, though not as rapid in its action as some other reagents, is probably one of the best for demonstrating the cocci. In some cases double stains were made with the blue and eosin.

Whenever gonococci were not found, subsequent examinations were made, at least three times, whenever it was possible, and in several patients it was only at the second or third examination that the gonococci were discovered.

I examined in this manner, during a space of very nearly three years, sixty-five women. Of these, four were examined again at an interval of at least a year, and two were examined again after an interval of two years and over.

It must here be stated that the result of my examinations does not represent an absolutely true statement of the condition of things. Cases of gonorrhœal

Case.	Gonococci.	No. of children.	Abortions and miscarriages.	Complains of—	Condition.	Treatment.
1	No.	0	1	Whites.	Anæmia.	General.
2	No.	3	0	Whites.	Cervical laceration.	Repair.
3	Yes.	Sterile.*	0	Whites and backache.	Pelvic cellulitis.	Rest, applications, curetting.
4	No.	4	1	Whites.	Posterior displacement.	Pessary.
5	No.	1	0	Whites.	Posterior displacement.	Pessary.
6	Yes.	1	0	Whites, difficult urination.	Perineal and cervical laceration.	Repair.
7	Yes.	2	1	Pain in ovarian region.	Posterior displacement, large left tube.	Operation advised, not accepted.
8	No.	0	0	Whites.	Incipient phthisis.	Sent to Adirondacks.
9	No.	0	1	Whites.	Uterine fibroids.	Seen once only.
10	Yes.	2	1	Whites.	Endometritis.	Intra-uterine applications.
11	No.	0	0	Whites.	Endotrachelitis.	Curetting.
12	No.	0	0	Whites.	Cervical stenosis.	Dilatation.
13	No.	Sterile.	0	Backache.	Endometritis fungosa.	Curetting.
14	No.	1	0	Whites.	Anæmia.	General.
15	No.	4	1	Whites.	Perineal and cervical laceration.	Refused operation.
16	Yes.	Sterile.	0	Whites, ovarian pain.	Double pyosalpinx.	Laparotomy.
17	No.	1	0	Whites.	Posterior displacement.	Pessary.
18	Yes.	1	1	General soreness in abdomen.	Acute gonorrhœa.	Antiseptic.
19	No.	2	0	Whites.	Diabetes.	Dietetic.
20	No.	6	0	Backache.	Posterior displacement, endometritis.	Curetting, ventrofixation.
21	No.	1	0	Whites, dysmenorrhœa.	Anæmia.	General.
22	No.	1	0	Whites.	Prolapsus uteri.	Pessary.
23	No.	3	0	Backache, whites.	Posterior displacement.	Seen but once.
24	Yes.	1	2	Backache, whites.	Perineal and cervical laceration.	Repair.
25	No.	0	0	Whites, menorrhagia.	Intra-uterine fibroid.	Removal.
26	No.	0	1	Backache.	Anteversion.	Seen but once.
27	No.	1	0	Backache.	Epithelioma of cervix.	Vaginal hysterectomy.
28	No.	0	0	Whites.	Cervical erosions.	Applications.
29	No.	Sterile.	0	Whites.	Cervical stenosis.	Gradual dilatation.
30	No.	0	0	Whites.	Anæmia.	General.
31	Yes.	Sterile.	0	Backache, whites.	Acute gonorrhœa.	Antiseptic.
32	Yes.	1	0	Difficult urination.	Urethral caruncle.	Removal.
33	No.	0	1	Whites, amenorrhœa.	Chronic nephritis.	General.
34	Yes.	Sterile.	0	Whites.	Endotrachelitis.	Applications.
35	No.	3	1	Whites.	Perineal and cervical laceration.	Anterior and posterior colporrhaphy.
36	No.	1	0	Whites.	Endometritis.	Seen but once.
37	No.	2	3	Whites.	Cystocele.	Operation refused; pessary.
38	No.	5	1	Whites.	Diabetes.	Dietetic.
39	No.	2	0	Backache.	Retroflexion.	Seen but once.
40	No.	3	0	Backache.	Cervical erosions.	Applications.
41	Yes.	1	1	Backache, whites.	Prolapsus uteri.	Ventrofixation.
42	No.	4	0	Whites.	Cystocele and rectocele.	Operation refused.
43	No.	0	0	Ovarian pain.	Double pyosalpinx.	Laparotomy.
44	No.	0	0	Whites.	Incipient phthisis.	Did not return.
45	No.	0	0	Backache.	Chronic constipation.	General.
46	Yes.	0	1	Whites.	Malarial toxæmia.	General.
47	No.	1	0	Backache.	Retroversion.	Pessary.
48	Yes.	0	2	Backache, whites.	Endometritis.	Seen but once.
49	No.	Sterile.	0	Whites.	Endometritis.	Curetting.
50	No.	0	1	Pain in abdomen.	Ovarian cyst.	Ovariotomy.
51	No.	3	1	Whites.	Ulceration, syphilitic. (?)	Seen but once.
52	No.	4	0	Backache.	Anæmia, prolonged lactation.	General.
53	Yes.	3	2	Whites.	Acute gonorrhœa.	Antiseptic.
54	Yes.	4	0	Whites, dysmenorrhœa.	Elytritis.	Antiseptic.
55	No.	1	1	Whites.	Uterine polypus.	Removal.
56	No.	0	0	Backache.	Endotrachelitis.	Applications.
57	No.	0	0	Whites.	Anæmia.	General.
58	No.	1	0	Whites.	Chronic constipation.	General.
59	Yes.	Sterile.	0	Difficult urination.	Acute gonorrhœa.	Antiseptic.
60	No.	1	0	Whites.	Retroversion.	Operation refused.
61	No.	5	2	Whites.	Cystocele and rectocele.	Anterior and posterior colporrhaphy.
62	No.	7	1	Whites.	Lacerated cervix.	Repair.
63	No.	1	0	Ovarian pain.	Left pyosalpinx.	Laparotomy.
64	Yes.	2	0	Whites.	Double pyosalpinx.	Operation refused.
65	No.	0	1	Whites.	Endometritis.	Curetting.

* *Sterile* used arbitrarily to denote cases having no children after five or more years of marriage.

infection must certainly have escaped notice. Most women take copious douches before coming to the office, and thus wash out the parts more or less completely, and in many cases gonococci are imbedded in the tissues, and for this and other reasons escape detection. Yet such evidence as I can present is positive, and to the numbers I give we may add whatever proportion seems to us most probable in order to get at a fairly accurate estimate.

All of the women seen complained of leucorrhœa, and in three only was there any evidence of an acute gonorrhœal infection from the appearance of the vulva, such as to lead to an instant diagnosis of gonorrhœa. In others the character of the discharge and the appearance of the parts simply led to suspicion, which was generally confirmed with the microscope. In four instances the patients declared that they were aware that their husbands had "something the matter" with them.

In a few instances in which the patients revealed the presence of cervical or perineal lacerations, or both, gonococci existed as a complicating cause of leucorrhœa.

Among the sixty-five women I examined I found gonococci seventeen times, or in twenty-six per cent. of the cases. Nineteen women were examined twice, and in three gonococci were found at the second examination. Thirty-two were examined three times, and in three of these the third examination revealed the cocci.

Four women examined after the lapse of a year, and who had presented no cocci, were still immune. Two women were examined after an interval of two years. Of these two patients one had previously shown gonococci, but her discharges were free from them at the second examination. The other patient had before been free from gonococci and still failed to show them.

These results tend to show that gonorrhœa is a more common disease among married women than is generally believed. They prove the utter futility of mere ocular examination in making the diagnosis of the disease, and the uselessness, so far as gonorrhœa is concerned, of the inspections made in countries where the social evil is partially regulated by medical control. This, however, is now everywhere fully recognized, and the necessity for microscopical examinations has been urged repeatedly.

Anent my statistics I will say that every woman I examined, so far as her own statement goes, was married. In the list I have not knowingly admitted any woman whose social status made her infection a professional perquisite.

When we reflect upon the fact that so few men escape gonorrhœal infection during the whole course of their lives, that so many have slight degrees of gleet which, while not constantly showing the presence of gonococci, is primarily due to them and manifests their presence every time that some cause of irritation occurs, it is not astonishing to find that so many women in decent classes of society should be affected.

The statistics I have gathered refer to too small a number of women to be considered as being thoroughly representative of existing conditions among married women suffering from leucorrhœa, and it is much to be desired that some one with more leisure and greater clinical opportunities should take up the work again and give us more positive data. I have but suggested a course of research which may lead to facts of importance.

Changes of Address.—Dr. Thomas H. Allen, to the Strathmore, Broadway and Fifty-second Street, New York; Dr. James E. Pilcher, of the Army Medical Department, from Columbus, Ohio, to Fort Crook, Nebraska; Dr. Carl Seiler, from Philadelphia to No. 203 Jefferson Avenue, Scranton, Pennsylvania.

OTITIS MEDIA SUBCUTIVA ACUTA,

FROM SWALLOWING A PIN.

By F. PIERCE HOOVER, M. D.,

LECTURER IN OTOLOGY, NEW YORK POLYCLINIC;
ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL.

The case I desire to make public is one of the most interesting of ear affections I have met during the whole of my experience, and the only one of the kind I have seen as the result of swallowing a pin. In January of this year, Mrs. M. brought her baby girl, two years old, to me with the complaint of "a discharging left ear, which had lasted four days; previous to that time the child suffered great pain in that ear for several days, which was somewhat relieved after the ear commenced to run, but at night she would cry repeatedly and slept only when the pain seemed to ease up, also if she lay down on that side at any time; this had been the case for several weeks." I found upon inspection that the patient was well nourished, and took food regularly, her mother said, except when the paroxysms of pain came on; she thought possibly it was all due to teeth cutting through the gums. She said the child had never been sick, with the exception of a slight cold, or diarrhœa occasionally, but in the early part of November, two months before calling on me, her baby swallowed a pin. A doctor was quickly summoned, who administered an emetic which produced excessive vomiting; the family afterward looked for the pin, which they hoped had been expelled, but could not find it. The mother presumed, as no further unpleasant symptoms followed except a sore throat, that possibly the foreign body did come out and fell on the floor; it could not be found, however; she did not for a moment imagine that the pain in the ear was the result of the pin.

After cleansing the ear and wiping it dry, I took a look at the ruptured drum and saw a very small perforation just below the malleus handle, from which pus would ooze. I came to the conclusion it was an acute suppuration and treated it accordingly, also recommending warm water containing a little salt to be syringed in the ear three times a day. The patient was brought back to my office next day; she had not slept any during the night, and cried continually. I made a careful examination of the throat, but could see nothing to cause pain from that quarter. A slight swelling had made its appearance behind the left ear, which was painful upon pressure, but percussion demonstrated no pus. After the ear was washed out with warm water and I was wiping it dry with a pledget of cotton on the end of an applicator, I noticed that the cotton caught on something. Passing in a probe, I touched a small object in the posterior part of the drum membrane, which decided me to explore further. The mother acquiescing, I gave the patient some chloroform on my handkerchief to inhale, producing slight anæsthesia. I then enlarged the opening in the drum membrane with a small Graefe knife, and again with a probe felt something which I was able to move, and with a pair of alligator forceps I caught hold of and extracted a pin; it was a small one, the kind used to stick in tape or ribbon, about a quarter of an inch long; when it was removed it came out *point* first. I am of the opinion that in some way the pin passed into the Eustachian tube, possibly when vomiting after an emetic, and worked its way to the place whence I took it. I do not believe it was pushed through the external canal into the drum, basing my supposition upon the position of the pin, the head being inward when it was removed.

The after-treatment consisted of syringing the ear three times a day with warm water and salt, and in eight days the discharge entirely ceased. The swelling behind the ear disappeared the day after the removal of the foreign body, and in two weeks the patient entirely recovered.

April 2d.—Mrs. M. brought her child to me with bronchitis, and informed me that her baby had never had any discomfort with her ear since the removal, three months before, of the pin.

143 West Forty-fifth Street.

REMARKS REGARDING
THE TREATMENT OF MALARIAL DISEASE.

By J. BALLAGI, M. D.,
HOMESTEAD, PA.

In places where malarial disease is endemic there are many sick people suffering with intermittent fever who never see the physician, but prefer to cure themselves by the use of quinine. Sometimes, I admit, this will produce the expected effect without medical prescription; in most cases, however, it fails. In the latter case the sick generally console themselves by saying that some other people afflicted with this disease, and who are under the treatment of a doctor, still succumb to this disease, and again and again they use bitter medicines or apply various patent remedies. The result of such self-treatment is often a cachexia malarica, and the physician, at last being called, will find the case more difficult and serious.

If we, however, wish to do full justice to this affair, we must necessarily concede that physicians, even the most skilled ones, are sometimes obliged to devote weeks or months to the cure of a common tertian or quartan. Hereby I do not wish to draw attention to pernicious forms occurring in the tropics, but only to the common cases which are found all over countries of moderate climate, just as much in America as in Europe, where malaria during the last few decades has occurred but rarely.

Quinine, without doubt, is in itself a specific remedy against malaria. If the malarial plasmodia of the blood are the pathogenetic germs, they will by the application of quinine either be utterly exterminated or at least be weakened, so that they no longer produce fever. What, then, is the reason that such application of quinine does not produce this effect in *all* cases without exception? Why are we not able to cure every sick man by this same method? So far we are as yet not sufficiently acquainted with the conditions of life of the malaria bodies, and therefore we are not yet able to be responsible for the inefficiency of quinine; if, then, we wish to answer this question, we must necessarily rely on the empirical facts which we have witnessed during the treatment of the sick.

Whenever we do not obtain the required effect after quinine has been administered in a properly diagnosticated case, we ought to attribute this to a faulty medical application—that is, to an improper prescription, improper dosing, and to the wrong time when quinine has been used.

Regarding the prescription—namely, the form in which quinine has been given—we can say that the taste of this medicine, bitter and almost intolerable as it is, must be the reason that quinine is administered in all possible forms, but not in such a form as will produce the expected effect; as it is frequently given compressed in tablets, in coated and uncoated pills, or in capsules, etc. I shall not speak at all of patent medicines, because we are never certain of the quantity of quinine contained in such preparations. If quinine is given in the form of tablets, pills, etc., the patient takes little or no notice of the bitter taste, but at the same time we have no certainty whether the preparation has been dissolved and absorbed. The compressed tablets and pills are to be condemned in any case; they are dissolved and absorbed only with great difficulty in the stomach of the patient affected with some febrile disease, lacking all acidity. The best form, without doubt, is the solution—in many cases, of which I shall speak later, we ought not to use the medicine in any other form—and by this solution I mean quinine sulphate or hydrochloride, with but little water (a hundred to a hundred and twenty grammes); to this should be added a few drops of hydrochloric acid, and all this very cold. If the patient refuses to take the solution, we may administer the drug in the form of powder wrapped up in wafers. We then order the patient to drink cold lemonade after that, and if there is any nausea we add a few small pieces of ice. This is always applicable to adults; with children, however, it is more difficult. For the latter the best form is dissolved quinine tannate, very sweet. (This drug containing only half as much alkaloid, we administer double the quantity.)

Another mistake very frequently occurs in the dosing, by giving too little. In order to suppress an attack of typical intermittent an adult is to be given two grammes (twenty-five grains). After taking this quantity most patients feel worse for some hours, but the attack will not return. For the rest, we need not be afraid of any possible symptoms of intoxication. The patients, after their attention has been drawn beforehand to any possible nausea, ringing in the ears, etc., will not be at all alarmed. In cases of masked malaria it may become necessary to increase the dose, even up to four grammes (fifty grains). In this respect I had an experience years ago in Europe with a case which was of great use to me. It took place in Goerbersdorf (Germany), over two thousand feet above the level of the sea. The patient, a merchant fifty years of age, *potator*, suffered with ophthalmia intermittens in typical form. The attacks showed themselves every third day precisely at 2 P. M. and continued for four to five hours. The pains were almost intolerable, but were only noticed in the bulbus and in the proximity of the orbits. I prescribed a gramme, and later a gramme and a half, of quinine sulphate in powder, but without success. As the attacks continued, I was in doubt concerning the diagnosis, and then sent the patient to Berlin to a renowned oculist (Professor Schweiger), thinking it might be an instance of glaucoma. Professor Schweiger affirmed my previous diagnosis and advised me to prescribe four grammes of quinine sulphate dissolved in a hundred and fifty grammes of water, adding to this ten drops of hydrochloric acid, and administering this in the forenoon from eight to ten o'clock. To prevent nausea, I used five to ten drops of bitter-almond water on ice pills. After the first application the attacks no longer occurred. (The occurrence of malaria in such a high place is also remarkable.) Here in this country I had occasion to treat a case of malarial disease in which the attacks appeared in a rarer form—namely, as cardialgia. After giving three grammes of quinine, dissolved, I succeeded in curing it.

In the use of quinine we meet at last with another question of great importance, to which, very frequently, not sufficient value is attributed. This question concerns the time when we ought to give this remedy. Most of our text-books direct us to administer it two or three hours previous to the attack.

I, for my part, am always of the opinion that the most of our frequent failures in the treatment of malaria rest on the false or inaccurate direction of our references. Quinine is to be given at the very least six hours before the ensuing attack. I hold to this rule so firmly that I, if necessity requires it, let the patients be even awakened from their sleep in order to administer the medicine. Sometimes it may happen that the patient is unable to define the exact hour of the beginning of the attack. In such cases we allow one or two attacks to pass; then we can ascertain the time. It is then of little importance whether an empty or full stomach receives the drug, yet the time after meals is preferable, and then we advise the patient to drink some mixture of a vegetable acid.

It is necessary to prescribe quinine for two or three weeks longer in smaller quantities, always keeping the proper time.

If we follow out these rules concerning the form, dosing, and time of administration of quinine, and if we treat our patients as much as possible at their homes, we need never expect ill success, and at the same time we are never obliged to give other preparations besides quinine sulphate and hydrochlorate. Thus also we need not apply the inconvenient enemas or hypodermic injections.

Therapeutical Notes.

Thiosavonal, a Soluble Sulphur Soap.—Thiosavonal is the trade name of a medicinal soap prepared by Müller and Grube (*Monatshefte für praktische Dermatologie*, xxiii, 7; *Centralblatt für Chirurgie*, September 11, 1897) by saponifying Riedel's sulphur oil with potash lye and adding empyreumatic oil of birch. It is described as a soft soap having no odor of sulphureted hydrogen and as being unirritating, and is said to have been used with good results in a number of cases for which sulphur preparations are employed.

The Treatment of Phreno-glottic Spasm in Children.—A writer in the *Gazette hebdomadaire de médecine et de chirurgie* for October 3d attributes the following prescriptions to Glover and Variot:

℞ Potassium bromide		1 part;
Syrup of ether, Syrup of orange flowers, Distilled water,	each	20 parts.

M. S.: A teaspoonful three times a day in the intervals between the paroxysms.

℞ Musk		1 part;
Potassium bromide		10 parts;
Syrup of orange flowers, Distilled water,	each	200 "

M. S.: A teaspoonful three times a day.

At bedtime a suppository composed of three quarters of a grain of extract of belladonna and thirty grains of solidified glycerin should be placed in the rectum, or five drops, gradually increased to twenty, of a mixture of equal parts of tincture of aconite root and tincture of belladonna may be given night and morning.

An Application for Pigmentary Blemishes of the Skin.—The *Journal de médecine de Paris* for September 26th gives the following formula:

℞ Corrosive sublimate	7½ grains;
White sugar	225 "
The white of one egg;	
Lemon juice . . . . about	450 "
Distilled water	3,750 "

M. S.: To be applied every morning and allowed to dry on.

An Intestinal Antiseptic Mixture.—According to the *Indépendance médicale* for September 29th, the following formula is advised by de Maximovitch:

℞ Naphthol	45 grains;
Chloroform	15 drops;
Castor oil	1,500 grains;
Essence of peppermint	5 drops.

M. Dose, a tablespoonful (for children, a teaspoonful) in port wine, beer, or hot and sweetened black coffee.

An Application for Chloasma.—The *Centralblatt für die gesammte Therapie* for October credits the following to the *Deutsche medicinische Wochenschrift*:

℞ Chloral hydrate		2 parts;
Carbolic acid, Tincture of iodine,	each	1 part.

M. To be applied with a brush.

Quinopyrine.—Santesson (*Deutsche medicinische Wochenschrift; Centralblatt für die gesammte Therapie*, October) has given this name to a preparation made by gently heating together three parts of quinine hydrochloride, two of antipyrine, and six of water. It does not appear to have any advantage over quinine.

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CONJUGAL DIABETES.

A considerable number of cases of the simultaneous development of diabetes in husband and wife, says a writer in the *Gazette hebdomadaire de médecine et de chirurgie* for October 3d, have been observed. Prominent among those who have contributed to the literature of the subject are Debove, Schmitz, Marie, Oppler and Kultz, Senator, Funaro, and Lécorché. This literature has recently been digested by M. Boisumeau (*Thèse de Paris,* 1897, No. 428), on the basis of whose thesis the article in question was written.

M. Boisumeau relates six cases of his own, and then proceeds to treat of the clinical features of the disease in its conjugal form. He first considers the length of time that elapses between marriage and the appearance of diabetes. It is only in a certain number of cases, he says, that the disease appears late in married life. In one of Schmitz's cases it attacked the husband at the end of five years, and the wife a year later; the husband died and the widow married again, and at the end of two years she had given diabetes to her new husband. Kultz cites cases, says M. Boisumeau, in which it attacked the second spouse in twelve, twenty-five, thirty-one, and thirty-three years respectively after marriage. In one of M. Boisumeau's own cases it attacked the wife twenty-nine years after her marriage.

The next point considered is that of the time that elapses between the discovery of diabetes in one spouse and its detection in the other. It seems that it is generally the husband that is attacked first. In some cases the disease is discovered in both man and woman at the same time. In several cases it has attacked the survivor after the death of one member of the pair. The length of time between the attack of the one and that of the other has been observed to vary from three months to sixteen years. Conjugal diabetes, says M. Boisumeau, does not differ in its course from the hereditary disease. Sometimes the cases of a diabetic married pair present a certain parallelism in their evolution, oftener there is no resemblance in the symptoms, and it is exceptional for the manifestations to be identical.

The author quotes Pierre Marie to the effect that, to account for the simultaneous occurrence of diabetes in husband and wife, there are two distinct theories: The one is that the similarity of the mode of life and of diet and the fact that the two share alike in misfortunes are amply sufficient to occasion conjugal diabetes; the other is that there is a true contagion. As regards likeness in the mode of life and in diet, says M. Boisumeau, it has been found that certain diseases, such as obesity, gravel, gout, and diabetes, are rather uncommonly prevalent among the employees of such institutions as the Beaujon Hospital, all leading about the same kind of life and subsisting on substantially the same diet. But this tendency can not be invoked to explain all cases of conjugal diabetes, for in some of them the husband has been much of the time away from home.

Arthritism is another ætiological element mentioned. This is in many instances inherited by both husband and wife, and diabetes is particularly common among the subjects of the gouty diathesis; according to Lagrange, this tendency is the common underlying cause of diabetes in the second member of the pair attacked, and the actual outbreak of the disease is brought on by the subject's anxiety over the discovery of its existence in the other spouse.

The notion of a direct or indirect contagion has been entertained by a number of authors, among whom are Debove, Schmitz, Teissier, Charrin, and Marie, some simply treating it as worthy of consideration, others cherishing it tenaciously. There are, indeed, M. Boisumeau admits, some cases on record that are highly suggestive of contagion. Among them are two of Funaro's cases, cited by Marie. In one of them a man who was the son of a diabetic and affected with diabetes himself lost his first wife with diabetes. He married again, and his second wife became diabetic. In the other case this man's sister, the subject of diabetes herself, gave birth to a diabetic son for her first child. She married the second time, and her second husband became diabetic. If, indeed, says M. Boisumeau, diabetes is contagious, we are at present utterly ignorant of the contagium and of the mechanism of its conveyance. More numerous and more demonstrative cases, he adds, are necessary to clear up the matter.

MUSHROOM POISONING IN FRANCE.

In the *Progrès médical* for October 9th M. Marcel Baudouin calls attention to the annually recurring newspaper reports of cases of death from eating poisonous mushrooms. The time for these reports, it seems, begins about the middle of September, when the early autumnal rains occur, one crop succeeding another with the regularity of a chronometer, and M. Baudouin says that they almost always come from the same parts of France. He cites two of these accounts as having been published in the course of a week. One of the cases occurred in Bédarieux, near Montpellier, and the other in Montélimar.

M. Baudouin asks if there is no way of guarding against this annual loss of life by mushroom poisoning. For a long time, he goes on to say, efforts have been made to teach the general public how to detect poisonous mushrooms, but evidently, he adds, these attempts have not sufficed for the mass of the population. He suggests that colored pictures of the poisonous fungi be posted up in public places every year, especially in the regions where this sort of poisoning mostly occurs. Colored pictures, he urges, whatever may be their value from a moral or an educational point of view, always meet with the attention of the multitude, especially children and rustics. He would have these posters affixed to the doors of the *mairies* and to those of the schoolhouses. Such a course, M. Baudouin thinks, would be much more effective than the one now employed, that of having illustrations of poisonous fungi buried in the depths of the apothecaries' shops. The excellent village apothecary, he remarks, is himself not always capable of distinguishing a poisonous fungus from an edible species, and he proceeds to indulge in a little mild raillery at the system of teaching medical botany in such a way that after three years' study of it one can not tell the good from the bad among fungi. He calls on the people of France to be practical for once. He would have both the pharmacists and the posters, and he hopes that together they would result in serving a good purpose.

MINOR PARAGRAPHS.

A CURIOUS FOOTBALL ACCIDENT.

THE *Lancet* for September 25th says that a remarkable accident has been reported in recent issues of its lay contemporaries. During a match at Hull, said the report in more than one place, one of the forwards wrenched himself and fractured a lower rib. He was carried off the field, "but resumed play afterward, the serious nature of the injury not being realized at first. At the Manchester Infirmary it was found that the fractured rib had penetrated the kidneys, causing internal hæmorrhage." The story struck us, says the *Lancet*, as a very strange one. A fractured rib, it goes on to say, is not always easy to diagnosticate, especially in a muscular subject, and the presumption was that the laceration of the kidney occurred as a result of resuming play. The report went on to say that there was no hope of recovery. The true facts, says the *Lancet*, are as follows, and it thinks that they should be known, as the widely disseminated story reflects rather seriously upon all the unfortunate lad's comrades. The *Lancet* further comments on the case as follows: "To allow a person considered to have a fractured rib to go on playing, and then for no apparent reason to let him go all the way from Hull to Manchester for medical advice, would have been inhuman. The player in question was charged in the left flank by another player. He did not resume play, and his injuries were attended to by a local practitioner who advised his removal to the Hull Infirmary. The injured player, however, insisted on being taken to Manchester, where he was admitted to the infirmary after midnight. No diagnosis was made of fractured rib, but he was then found to be suffering from shock and extreme tenderness between the last rib and the crest of the ilium on the left side. There were also increased resistance in this site and a large quantity of blood in the urine. These symptoms, which seemed to indicate a ruptured kidney, disappeared after forty-eight hours, and hopes are now entertained of the patient's recovery."

OIL OF TURPENTINE IN THE TREATMENT OF SCARLET FEVER.

DR. PUJADOR, of Barcelona (*Médecine infantile*, September, 1897; *Lyon médical*, September 19, 1897), has been led by Fochier's happy results from the use of turpentine injections in puerperal streptococcus infection to resort to the same agent in grave cases of scarlet fever. In children from three to six years old, he finds, ataxic symptoms may be overcome by means of one or two subcutaneous injections of fifteen grains of oil of turpentine. In adults a little larger doses are required, from thirty to forty-five grains. Not more than fifteen grains should be given to a child in the course of one day, and not more than forty-five grains to an adult. To prevent the irritant local action of the injections, which might otherwise lead to the formation of abscesses, it is necessary to add an alkali to the turpentine, such as sodium bicarbonate [the amount to be added is not stated]. The oil may be given by the mouth, in gelatin capsules or suspended in mucilage. It exerts a favorable action against the albuminous nephritis that follows scarlet fever; not only does it prevent this complication, for it is never observed as a sequel of the disease treated by Pujador's method, but also, given at the time when the nephritis is manifested by anasarca and albuminuria, it rapidly allays the symptoms and soon restores the normal state of the renal secretion.

PENTOSURIA AND DIABETIC XANTHOMA.

COLOMBINI (*Monatshefte für praktische Dermatologie*, xxiv, 3; *Centralblatt für innere Medicin*, October 9th) relates the case of a farmer, fifty years old, free from hereditary taint and from venereal affections, who had complained for a short time of general weakness and for about six weeks had had an eruption on various parts of his body. There was a papular eruption scattered irregularly over the thighs, the nates, and the loins, partly confluent; on the palms of the hands, the soles of the feet, the face, and the scalp the papules varied in size from that of a pin's head to that of a pea, and were somewhat elevated above the surrounding surface. Some of them were smooth, and others were uneven, and they were not uniform in color; the centre was more or less decidedly yellow, while the periphery showed a pale or decided red color. There was no discharge. The urine, which was of the specific gravity of from 1.023 to 1.025, contained sugar and pentoses, but no albumin, propeptones, peptones, mucus, pus, lactose, inosite, or lævulose. The man was put upon the use of a diet of milk and meat (he had been a vegetarian) and doses of from ten to fifteen drops of Fowler's solution twice a day. No new eruption appeared, the existing skin lesions slowly disappeared, and in four months the patient was free from symptoms and there were no pentoses in the urine.

NASAL MUCOUS MEMBRANE AS A REMEDY.

Dr. Rivière, of Lyons (*Lyon médical*, September 19th), reports that he has employed in the treatment of a certain number of nasal affections a fluid extract of the pituitary mucous membrane prepared by Dr. Jacquet in the following manner: The mucous membrane of the middle and lower turbinated bones of the sheep is macerated for twenty-four hours, at a temperature kept at 149° F., in water containing four parts of resorcin in a thousand; the liquid is then filtered and subjected to the same degree of heat for twenty-four hours more. The results of the use of this preparation, says Rivière, are analogous to those produced with other substances that are efficient in cases of perforation of the sæptum, rhinitis sicca, and rebellious syphilitic disease of the nose. In a grave case of ozæna that had relapsed after various sorts of treatment, including the employment of electrolysis, applications of the pituitary extract, after cleansing, were followed by a rapid subsidence of the odor and then by greater benefit in every way than is generally obtained by the use of procedures less innocent or more difficult.

PYRETHRUM AS A REMEDY.

Dr. G. R. Plummer, of Key West, Florida, writes to the editor of the *Journal of the American Medical Association* asking his professional brethren to experiment with insect powder, the flowers of *Pyrethrum carneum* and *Pyrethrum roseum*, which plants, he says, are now largely cultivated in California. In consequence of an accident to a child, says Dr. Plummer, it seems probable that pyrethrum has anthelminthic properties, and he would like to know what doses of it are proper for man. As it is frequently adulterated, he asks experimenters to take pains to get a perfectly pure article.

"EMPYÆMA."

We sympathize with our learned English contemporary the *Lancet* in its regret at the gradual disappearance of the diphthong from words adopted from the Latin or Greek. We think it should be retained in technical words. But we fear that the *Lancet* has fallen into error in one of its illustrations of the change of spelling. In its issue for September 25th it says: "'Empyema' is now never written 'empyæma.'" Dear contemporary, we do not know that it ever was.

DEFECTS INHERITED FROM INFANCY.

At the International Congress of Neurology, Psychiatry, Medical Electricity, and Hypnology held in Brussels in September (*Presse médicale*, September 29th), Dr. Verriest, of Louvain, attributed great importance to the diseases of early childhood in the production of subsequent ill health, especially to vicious cicatrization of the navel, separation of the recti abdominis muscles, a trilobate belly, falling of the kidney, a vertical direction of the stomach, hæmorrhoids, rickets, prognathism, and premature arterial sclerosis.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 26, 1897:

DISEASES.	Week ending Oct. 19.		Week ending Oct. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	47	8	25	13
Scarlet fever	100	7	108	7
Cerebro-spinal meningitis	0	0	0	0
Measles	97	2	121	6
Diphtheria	125	17	154	15
Croup	2	2	1	0
Tuberculosis	235	102	169	122

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending October 23, 1897:

Yellow Fever—United States.

Mobile, Ala	Oct. 16–22	49 cases,	7 deaths.
Montgomery, Ala	Oct. 18	4 "	1 death.
Baton Rouge, La	Oct. 18–22	2 "	1 "
Franklin, La	Oct. 14–21	3 "	1 "
New Orleans, La	Oct. 16–22	300 "	33 deaths.
Bay St. Louis, Miss	Oct. 17–19	7 "	1 death.
Biloxi, Miss	Oct. 16–22	110 "	6 deaths.
Cayuga, Miss	Oct. 16–22	19 "	1 death.
Clinton, Miss	Oct. 16–22	16 "	
Edwards, Miss	Oct. 16–22	30 "	5 deaths.
McHenry, Miss	Oct. 16	1 case.	
Nitta Yuma, Miss	Oct. 16–21	3 cases.	
Pascagoula, Miss	Oct. 18–22	13 "	1 death.
Scranton, Miss	Oct. 16–22	77 "	2 deaths.
Waveland, Miss	Oct. 19	2 "	
Memphis, Tenn	Oct. 22	1 case.	

Yellow Fever—Foreign.

Cardenas, Cuba	Oct. 2–9		1 death.
Havana, Cuba	Oct. 1–14		39 deaths.
Matanzas, Cuba	Sept. 30–Oct. 2		2 "
Regla, Cuba	Sept. 1–14		30 "
Santiago de Cuba	Oct. 2–9		8 "
Sagua la Grande, Cuba	Oct. 2–9		3 "
Kingston, Jamaica	Sept. 1–Oct. 2	6 cases,	7 "

Cholera—Foreign.

Bombay, India	Sept. 14–21		31 deaths.
Calcutta, India	Sept. 4–11		3 "
Madras, India	Sept. 11–17	12 cases,	6 "

Plague—Foreign.

Bombay, India	Sept. 14–21		35 deaths.

Small-pox—United States.

Birmingham, Ala., and suburbs	Oct. 9–16	2 cases.	
McKeesport, Penn	Oct. 9–16	1 case.	
Memphis, Tenn	Oct. 14	1 "	

Small-pox—Foreign.

Rio de Janeiro, Brazil	Sept. 11–28	7 cases,	1 death.
Cienfuegos, Cuba	Oct. 3–10		1 "
Sagua la Grande, Cuba	Oct. 2–9	30 "	2 deaths.
Calcutta, India	Sept. 4–11		2 "
Odessa, Russia	Sept. 25–Oct. 2	1 case.	
St. Petersburg, Russia	Sept 25–Oct. 2	16 cases,	5 "
Warsaw, Russia	Sept. 25–Oct. 2		5 "
Glasgow, Scotland	Sept. 25–Oct. 2	17 "	
Madrid, Spain	Sept. 28–Oct. 25		2 "

The Journal of the Boston Society of Medical Sciences is announced to be enlarged to octavo size this month. By general consent of the heads of departments it will contain full abstracts of experimental work carried on in the following institutions: The Medical School of Harvard University, the experimental laboratories of the Massachusetts General and the Boston City Hospitals, the physiological and biological departments of the Massachusetts Institute of Technology, and Clark University. There will be published at least ten numbers a year, running from October to June.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 17 to October 23, 1897:*

POINDEXTER, J. D., Captain and Assistant Surgeon, now on temporary duty in New York city, is ordered to Fort Hamilton, N. Y., for duty when relieved from present duty by GORGAS, WILLIAM C., Captain and Assistant Surgeon.

EGAN, PETER R., Captain and Assistant Surgeon, is granted leave of absence for six months.

GODFREY, GUY C. M., First Lieutenant and Assistant Surgeon, is relieved from further duty at Fort Yellowstone, Wyoming, and is ordered to Fort Yates, North Dakota, for temporary duty.

STRONG, NORTON, Captain and Assistant Surgeon. Upon being relieved from duty as attending surgeon and examiner of recruits at Chicago, Ill., to await orders in that city for the convenience of the Government.

SHANNON, W. C., Major and Surgeon. Sick leave of absence further extended six months.

SMART, CHARLES, Lieutenant Colonel and Deputy Surgeon General, and ARTHUR, WILLIAM H., Captain and Assistant Surgeon, are detailed to represent the Medical Department of the Army at the twenty-fifth annual meeting of the American Public Health Association, to meet at Philadelphia, Pa., October 26 to 29, 1897.

Society Meetings for the Coming Week:

MONDAY, *November 1st:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

TUESDAY, *November 2d:* New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Hampden, Massachusetts, District Medical Society (Springfield); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *November 3d:* New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, N. Y. (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, *November 4th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans, N. Y. (annual—Albion); Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *November 5th:* Practitioners' Society of New York; Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *November 6th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

BRADBURY—DIXON.—In New York, on Wednesday, October 20th, Dr. George A. Bradbury, of Lansingburg, N. Y., and Mrs. Anna P. Dixon.

BROUGHTON — MORRIS. — In Bloomfield, N. Y., on Wednesday, October 20th, Dr. W. R. Broughton and Miss Jennie Morris.

FARRINGTON—BURFORD.—In New York, on Wednesday, October 13th, Dr. Pope M. Farrington, of Memphis, Tennessee, and Miss Josephine Finley Burford.

GELZER—O'BRYAN.—In Longview, Texas, on Tuesday, October 5th, Mr. H. Louis Gelzer and Miss Elise O'Bryan, daughter of Dr. Andrew F. O'Bryan.

HOBBS—HENDERSON.—In New York, on Wednesday, October 20th, Dr. Angier B. Hobbs and Miss Caroline M. Henderson.

MCCALL—HENDERSON.—In Kalamazoo, Michigan, on Tuesday, October 5th, Dr. James McCall and Miss Kate M. Henderson.

Letters to the Editor.

THE INCOMPATIBILITY OF ANTIPYRINE AND SODIUM SALICYLATE (IN POWDER FORM).

119 EAST 128TH STREET, *October 2, 1897.*

To the Editor of the New York Medical Journal:

SIR: Permit me to call the attention of the readers of your valuable journal to the fact that antipyrine and sodium salicylate can not be dispensed together in powder form: immediately or within a short time liquefaction takes place, and when the powders reach the patient he is likely to find no powders at all, but only thoroughly soaked pieces of paper. Though for practical purposes it is immaterial whether the change is of a chemical or of a purely physical nature, it is my opinion that the liquefaction occurs in virtue of a true chemical reaction. Helbing, in his *Modern Materia Medica*, says: "The reaction of sodium salicylate and antipyrine, sometimes stated to be the result of a chemical change, has been decided by careful research to be merely the result of deliquescence, the salicylate acting as a carrier of moisture to the more soluble antipyrine (spica)." To this statement I am unable to agree. Sodium salicylate is permanent in the air—*i. e.*, it does not attract moisture; nor is antipyrine *more* soluble. Rather the contrary. Antipyrine is soluble in one part of water, while sodium salicylate is soluble in 0.9 part of water. Nor does sodium salicylate contain any water of crystallization which might be liberated during trituration and act as a solvent for the antipyrine (as is the case with many salts).

The subject of the incompatibility of the two above-mentioned drugs was recalled to my mind by an occurrence which took place a few days ago.

A physician was called in to a patient suffering with acute articular rheumatism; the fever was very high, and the pains were excruciating. The doctor prescribed powders of phenacetine, antipyrine, and sodium salicylate, and the druggist was asked to make them up in a hurry. It was a damp evening, and when the medicine was brought to the patient there was *not a particle of powder* left, only a wet box of papers. The druggist was asked for an explanation, but he said that it was none of his business, that he made up the prescription as the doctor wanted, and if anything was wrong, they should apply to the latter for information. They went to the doctor—he was out and another physician was sent for. He relieved the patient by a hypodermic injection of morphine and prescribed capsules of phenacetine and salol; he was asked to take further charge of the case. Thus, non-familiarity with the important but sadly neglected subject of incompatibilities lost the physician a good family.

William J. Robinson, M. D.

A HAT PIN IN THE URETHRA.

23 South Church Street, West Chester, Pa., *October 6, 1897.*

To the Editor of the New York Medical Journal:

Sir: A man, sixty-nine years old, white, married, came to the Chester County Hospital July 19, 1896, in great anxiety and some pain, saying that for some months, at times, he had had difficulty in voiding urine, and had been in the habit of passing a hat pin, head first, through the urethra, which opened it and so gave him relief. On this day the pin had slipped from his fingers and passed into the urethra out of sight and reach.

On examination, the point of the pin could be felt in the perinæum, and its head reached by a finger passed well into the rectum.

To extract it through the urethra was out of the question; he was given ether and the finger in the rectum made to push the point of the pin through the tissues. A small blade was passed along the pin into the bladder to make an opening large enough to extract the head, which was of about the size of an ordinary shoe button, and the pin itself five inches and three quarters long.

The wound healed immediately, and gave him no discomfort after the pin was removed. He was discharged well on July 22d.

On seeing a similar case reported lately in the *New York Medical Journal* I wondered how frequently the hat pin was used as a domestic urethral instrument.

Charles E. Woodward, M. D.

Book Notices.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XI. Diseases of the Nervous System. New York: William Wood and Company, 1897. Pp. v–3 to 962.

The first half of this volume is devoted to the consideration of the diseases of the cerebro-spinal and sympathetic nerves, by Dr. James Hendrie Lloyd. This author reviews the anatomy, physiology, and pathology of the nerves, the disorders of motion, sensation, nutrition, and the reflexes, and then takes up the subject of diseases of the cranial nerves. These are discussed with as much fullness as conforms to the scope of the work. The diseases of the spinal nerves are described, and in a separate section is given a very thorough review of our knowledge of multiple neuritis. In his remarks on Morvan's disease the author refers to its resemblance to anæsthetic leprosy, but he makes no mention of Zambacao Pasha's investigations in Brittany, which seemed to identify the condition described by Morvan with the lesions of the form of leprosy mentioned.

The section on trophoneuroses is by Dr. Charles K. Mills, who describes with terseness the more common phases of such disorders, while Dr. F. X. Dercum has written the paper on sclerodermia, acromegaly, and adiposis dolorosa.

Dr. L. Bruns, of Hanover, and Dr. F. Windscheid, of Leipsic, are the authors of the section on diseases of the spinal cord; Dr. P. J. Möbius, of Leipsic, has written that on tabes dorsalis; Dr. A. Strümpell furnishes that on hereditary ataxia and hereditary spastic spinal paralysis; and Dr. Lightner Witmer contributes the section on pain. The latter author considers the subject from a psycho-physiological standpoint. He holds that there is no evidence of the existence of peripheral-pain nerves, while there is some reason to believe in a pain centre.

The general plan of the work has been continued by the writers for this volume, and their names afford evidence of the satisfactory character of the information it contains. It is unfortunate that such a work has so meagre an index.

Manual of Bacteriology. By Robert Muir, M. A., M. D., F. R. C. P. Ed., Lecturer on Pathological Bacteriology, and Senior Assistant to the Professor of Pathology, University of Edinburgh, etc., and James Ritchie, M. A., M. D., B. Sc., Lecturer in Pathology, University of Oxford. With One Hundred and Eight Illustrations. Edinburgh and London: Young J. Pentland. New York: The Macmillan Company, 1897. Pp. xvi–519. [Price, $3.25.]

The most striking feature of this work is the attention devoted to practical utility in the description of elementary detail and the more important methods of procedure.

The preliminary chapters are calculated to afford a good idea of the morphology and methods of cultivation of bacteria and non-pathogenic micro-organisms, as well as the detail of microscopical methods. The chapters on the relations of bacteria to disease and on suppuration and allied conditions serve to afford a groundwork for the subsequent chapters on specific diseases and their micro-organisms.

The history of the discovery of the different pathogenic micro-organisms, their characteristics, the methods of their cultivation, and their ætiological relations to the particular disease, are admirably given.

The chapter on immunity gives a very fair exposition of our present knowledge of the factors related to that interesting feature of the animal organism. In this chapter, as well as in the chapters on small-pox and vaccination, and hydrophobia and Pasteur's treatment, the authors present the several theories in regard to the causation of the phenomena, but avoid committing themselves to any of them. There are chapters on malarial fever and on amœbic dysentery.

The essentially practical character of the volume is likely to make it a popular text-book.

Atlas and Essentials of Bacteriology. By Professor K. B. Lehmann, Chief of the Hygienic Institute in Würzburg, and Dr. Rudolph Neumann, Assistant in the Hygienic Institute in Würzburg. With Sixty-three Chromo-lithographic Plates, comprising Five Hundred and Fifty-eight Figures, and Numerous Engravings. New York: William Wood and Company, 1897. Pp. vii–204.

As the title states, this work contains sixty-three plates, each of which gives a number of illustrations of micro-organisms and their mode of growth; it contains also some pages of text. The text describes the morphology of bacteria, their chemical composition, the conditions favorable to their growth, the reaction of the nutrient media, the injury to these organisms by chemical substances or deficient pabulum or gases, and the influence of temperature, electricity, and light upon their vitality. The conditions of formation and germination of spores are reviewed; and mention is made of the mechanical, optical, thermal, and chemical effects produced during the growth of bacteria and of their ferments and the changes produced by them. A technical appendix describes the methods of cultivating, staining, and mounting these micro-organisms.

The plates have been carefully executed and in general give a fair idea of the appearance of bacteria and of their mode of growth in nutrient media.

The volume is likely to prove a very useful one, particularly to students who desire to confirm their investigations in laboratories in which stock-cultures are few in number, as the plates illustrate many organisms that are of no known pathological importance.

Constipation in Adults and Children. With Special Reference to Habitual Constipation and its most Successful Treatment by the Mechanical Methods. By H. ILLOWAY, M. D., formerly Professor of the Diseases of Children, Cincinnati College of Medicine and Surgery, etc. New York: The Macmillan Company, 1897. Pp. xv–3 to 495. [Price, $4.]

As a preliminary to the consideration of his subject, the author gives a *résumé* of the anatomy of the intestines and of the characteristics of flatus, of intestinal peristalsis, and of fæces. He regards every person as constipated who does not have a full, free evacuation once in three days at least, even though the individual presents no disturbances of normal function. Constipation is classified as acute and chronic, each of which forms is subdivided into several groups, and most of the groups are explained by clinical histories of cases.

The symptomatology, diagnosis, and consequences of constipation are described in detail, and no fact of importance has escaped the author's comprehensive investigation. The treatment of the disorder by means of massage, hydrotherapy, electricity, and medicine is detailed at length. Separate chapters are devoted to the treatment of constipation consequent upon particular conditions.

The same attention to completeness of detail characterizes the chapters on constipation in infants and children.

It will be a matter of some surprise to the physician who has given but casual thought to this very prevalent disorder that there is so much information to be obtained about it. This volume he will find very suggestive and useful.

BOOKS, ETC., RECEIVED.

The Practice of Surgery. A Treatise on Surgery for the Use of Practitioners and Students. By Henry R. Wharton, M. D., Demonstrator of Surgery in the University of Pennsylvania, etc., and B. Farquhar Curtis, M. D., Professor of Clinical Surgery in the New York Post-graduate Medical School and the Woman's Medical School of the New York Infirmary, etc. Profusely Illustrated. Philadelphia and London: J. B. Lippincott Company, 1897. Pp. vii–1240.

Therapeutics: Its Principles and Practice. By H. C. Wood, M. D., LL. D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A Work on Medical Agencies, Drugs, and Poisons, with Especial Reference to the Relations between Physiology and Clinical Medicine. The Tenth Edition of A Treatise on Therapeutics, thoroughly revised. Philadelphia: J. B. Lippincott Company, 1897. Pp. xxxi–17 to 1033.

Incompatibilities in Prescriptions. For Students in Pharmacy and Medicine, and Practising Pharmacists and Physicians. By Edsel A. Ruddiman, Ph. M., M. D., Adjunct Professor of Pharmacy and Materia Medica in Vanderbilt University. First Edition. First Thousand. London: Chapman & Hall, Limited. New York: John Wiley & Sons, 1897. Pp. 264. [Price, $2.]

About Children: Six Lectures given to the Nurses in the Training School of the Cleveland General Hospital in February, 1896. By Samuel W. Kelley, M. D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons, Medical Department of the Ohio Wesleyan University, etc. Cleveland: The Medical Gazette Publishing Company, 1897. Pp. 9 to 179.

Outlines of Anatomy. A Guide to the Methodical Study of the Human Body in the Dissecting Room. By Edmund W. Holmes, A. B., M. D., Demonstrator of Anatomy, University of Pennsylvania. Philadelphia: The Avil Printing Company, 1897. [Price, $2.]

Annual Report of the Board of Health of the Health Department of the City of New York for the Year ending December 31, 1896.

Report of the Commissioner of Education for the Year 1895–'96. Volume I, containing Part I.

Transactions of the American Climatological Association. For the Year 1897. Volume XIII.

Transactions of the American Otological Society. Thirtieth Annual Meeting, Washington, D. C., May 4, 1897. Volume VI. Part IV.

Transactions of the State Medical Society of Wisconsin. For the Year 1897. Volume XXXI.

Address in Surgery. By W. W. Keen, M. D., of Philadelphia. [Reprinted from the *Journal of the American Medical Association.*]

The Treatment of Cancer of the Rectum, with a Report of Twenty-five Cases. By W. W. Keen, M. D. [Reprinted from the *Therapeutic Gazette.*]

Tuberculosis or Carcinoma (?) of the Stomach; Exploratory Cœliotomy; Subsequent Apparently Complete Cure. By W. W. Keen, M. D. [Reprinted from the *Annals of Surgery.*]

Resection of the Sternum for Tumors, with a Report of Two Cases, and a Table of Seventeen Previously Reported Cases. By W. W. Keen, M. D. [Reprinted from the *Medical and Surgical Reporter.*]

Literary Methods in Medicine. By W. W. Keen, M. D. [Reprinted from *International Clinics.*]

Clinical Lecture on an Obscure Tumor of the Abdomen. By W. W. Keen, M. D. [Reprinted from *Dunglison's College and Clinical Record.*]

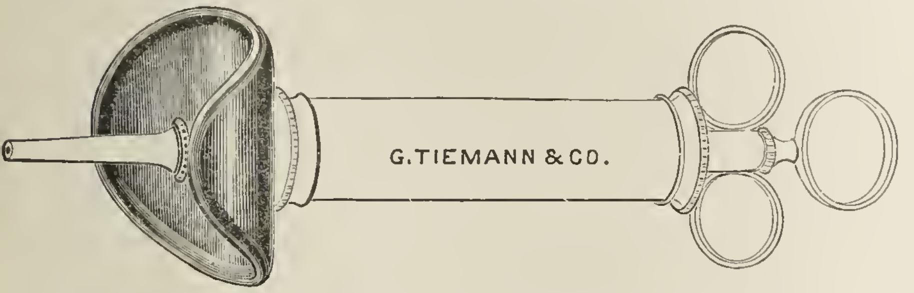
New Inventions, etc.

A NEW SHIELD FOR AN EAR SYRINGE.

By Frank C. Todd, M. D.,
MINNEAPOLIS, MINN.,
OPHTHALMIC AND AURAL SURGEON TO ASBURY HOSPITAL;
INSTRUCTOR IN OPHTHALMOLOGY AND OTOLOGY
IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF MINNESOTA.

The accompanying cut illustrates better than words can describe a new ear-syringe shield devised by the author and made by Messrs. Tiemann & Co.

The shield of the Pomeroy syringe is a valuable appliance, as it prevents the return current from wetting the operator, but in so doing it causes the stream to flare off on either side, sprinkling the patient and surrounding furniture. It will be observed that this shield is so constructed that the return current is carried safely into the bowl held under the ear, protecting both the operator and patient even when a strong current is used.



This shield is made of vulcanized rubber and can be purchased alone or with a syringe. The aperture through which the point of the syringe is screwed is made to fit the smallest syringe point, and can be made to fit any syringe by simply enlarging the hole with a jackknife.

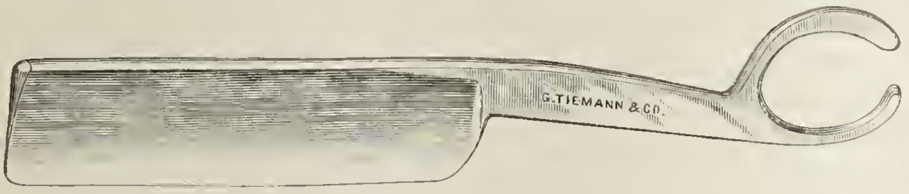
602 Nicollet Avenue.

AN ASEPTIC RAZOR.

By Edward R. Pfarre, M. D.

It is not my desire to make claim to an invention in presenting to the medical profession a simple but very useful instrument. My duties as ambulance surgeon and interne have frequently required me to use a razor, either to shave the head before suturing a scalp wound or to shave a patient prior to an abdominal or other operation.

The usual razors, as manufactured all over the world, with horn or bone handles, answer the purpose very well, but it is a difficult matter to keep them clean. In ambulance work, or in any case where immediate surgical interference is necessary, one is usually inclined to neglect the proper cleansing of a razor, because it is almost impossible to thoroughly clean the rivet which holds the blade to the handle. It is not advisable to boil the razor, because the horn or bone handle would warp or split. The razor which Messrs. George Tiemann & Co. have made for me was designed to give one who is accustomed to the use of an ordinary razor the same feeling of safety and absolute control over the blade. The little finger is placed within the open ring, and the first, second, and third fingers are laid on the back of the shank, while the thumb rests on the lower side of the shank just back of the heel of the blade.



The peculiar construction or shape of the razor insures the proper angle of the blade while shaving. I have found it very much easier to shave any part of the body with this razor than with the ordinary one, because the position in which the instrument is held is practically sure to be correct. A glance at the illustration will show that the razor can be made thoroughly aseptic without trouble.

196 Lincoln Place.

Miscellany.

Toxines in Dermatology.—This was the subject of a paper read by M. Hallopeau before the Section of Dermatology and Venereology [*sic*] of the Twelfth International Medical Congress, for an abstract of which we are indebted to the Paris Institute of Bibliography. By the word toxines, he said, was understood all the morbific substances produced by living beings. The essential condition of their production was cellular activity; to each cellular action belonged the genesis of products that were characteristic of it, and might remain incorporated with the anatomical elements, become accumulated in the ambiant tissue, penetrate the lymphatic circulation or that of the blood, and become primarily or secondarily eliminated with the products of secretion; whence the possible appearance of morbid symptoms, either in a limited territory of the external integument, on various parts of its surface, or in its totality. It might become developed in subjects who generated toxines or in other living beings to whom the noxious product was transmitted. The subject of toxines was a very vast one, since it comprised not only all the venoms or poisons, but also all the products of secretion and of assimilation of living organisms and of the parasites which multiplied in them; besides, the tissues and especially the normal liquids of each living species might become noxious to other species.

M. A. Gautier, in studying these products from a chemical and biological point of view, had divided them into three principal classes: Leucomaines, ptomaines, and toxines properly so called. We must take into consideration, said the author, in the pathogenic interpretation of the toxines, not only the nature of the agent, but also that of the material presented by the affected subject by reason of his constitution, of his age, and of the conditions in which he happened to be at the time he was exposed to the noxious action. The toxines might be exogenous, endogenous, or of mixed origin.

The exogenous toxines comprised the venoms, the poisons, and the liquids and tissues of other animal species. Their action was exercised near the place of entrance under the form of erythema, vesication, suppuration, urticaria, purpura, more rarely gangrene, sometimes dyschromia, such as that which characterized the action of the pediculi pubis, and abnormal sensations, more frequently pruriginous or burning; it might make itself felt from a distance, or become generalized over the entire cutaneous surface.

The endogenous toxines might proceed from troubles in the cellular functions or from absorption of the products of normal or altered secretion. The products of cellular function might become noxious either from their excessive quantity or by their alteration, under the influence sometimes of an hereditary or acquired predisposition, sometimes from a transitory or lasting alteration of the internal medium which constituted the humor; this alteration might be itself of exterior origin, accidental, or provoked by a trouble in some function of the organism.

Among the products of visceral origin which might give rise to cutaneous alterations were thyreoidin and the substances which accumulated when the thyreoid body was destroyed, the secretion of the suprarenal capsules, the abnormal substances that were engendered during the menstrual period, etc. The products of secretion of which overabundance, alteration, or insufficient elimination was the cause of poisoning included, especially, bile, glucose, and the materials of the urinary and sudoral secretions. Tommasoli, said M. Hallopeau, had demonstrated the influence of the auto-toxines on the genesis of the hyperkeratoses.

Regarding toxines of mixed origin, those that engendered the microbes introduced into the organism should be considered as such, for, if the agent which produced them came directly or indirectly from outside, it engendered them with the aid of elements found in the cells or in the liquids of the organism. The fact, said M. Hallopeau, was very evident in the fermentations of the digestive tract, that was incessantly invaded by numerous microbian colonies which secreted there toxines at the expense either of nutrition or of the products of secretion. The organism was protected against them especially by the epithelium and by the liver. The mouth was frequently the seat of infectious absorption, and this was a cause of cutaneous alterations in pyrexia. The absorption of the toxic products elaborated in the dilated stomach was the cause of acne, of eczema, and of urticaria; the rose spots of typhoid fever were due to the action of toxines developed in the intestine.

The mode of action of certain toxines might be very diverse. That of tuberculosis might remain localized around the microbian centres and give rise either to anatomical tubercle or to other isolated and limited neoplasms which might spread from one place to another, and might provoke at a distance various other manifestations of tuberculosis, such as Barthélemy's follicles, the so-called acne cachecticorum, and acne scrofulosorum, inflammation of the solitary or agminated glands, complicated or not with pemphigoid eruptions, and persistent papulo-erythematous eruptions. The pseudo-exanthematic manifestations of erythematous lupus should also be interpreted in the same sense; and it was probably the same of the acute erythematous eruptions which were observed in glanders, leprosy, and mycosis, the toxines intervening, in all probability, in the genesis of eczema, psoriasis, purpura, and pemphigoid eruptions that were not trophoneurotic. M. Hallopeau concluded by stating that the toxines exercised a great influence in the genesis of skin diseases, but that it remained to determine the exact chemical constitution of each one of them.

Dental Affections and their Relations with the Genital Functions in Women.—M. Jamon, in the *France médicale* for October 2d (*Indépendance médicale*, October 6th), states that during menstruation or the days which precede it patients often complain of pain in the teeth and in the gums. These pains are more frequent at puberty, at the establishment of menstruation. The teeth may be absolutely healthy or correctly plugged. The gums are tumefied and sensitive. Gingivitis may appear, with or without local causes, at the time of menstruation. Teeth that are spontaneously sensitive are also sensitive on contact with instruments. Very often the patients complain of an increase of the salivary secretion.

These pains may give rise to very distressing radiations in the ear, and they may be themselves connected with a stomatitis dependent upon menstrual troubles. All these troubles become attenuated or disappear, says the author, under local treatment, such as painting the gums with tincture of iodine and washing the mouth with an emollient, together with a proper medication to favor the appearance of menstruation.

The same symptoms are also observed in many women who have not menstruated or who have reached the menopause.

A menstrual period, continues the author, has been said to be a contraindication to the extraction of teeth, but in reality there exists but one contraindication of this kind, and that is in hæmophilia, which is shown by an incessant tendency to various hæmorrhages, but, on the whole, such cases are very rare.

The unfavorable influence that pregnancy exerts on the vitality of the teeth renders the care of the mouth and of the teeth more imperative than at any other time.

During lactation the care of the teeth is no less imperative than during pregnancy; in order that a woman may be a good wet-nurse, her teeth should be kept in as good a condition as possible in order to enable her to chew properly.

The Need of Veterinary Education in Medical Colleges.—This was the title of a paper read at the recent annual meeting of the United States Veterinary Medical Association, by E. P. Niles, V. S., of Blacksburg, Virginia (*Journal of Comparative Medicine and Veterinary Archives*, October, 1897), in the course of which he said:

"Upon giving the subject but a passing thought, it may seem to some of you that veterinary education in medical colleges is of but little, if any, importance, and a large number of the medical fraternity may ask, What do we care for a knowledge of the diseases of the lower animals? In answer to the latter I would ask, How many lives could you have saved had you but known the source of certain contagious diseases which you have treated in your practice? The idea of employing a veterinarian as a member of the faculty of a medical college seems to have given cause for but little thought, even at the present day, and I know of but three institutions which have established a chair of comparative pathology. Until recently it could not be wondered at that more importance was not attached to veterinary education by our medical boards, for we have been laboring in our infancy—screaming and howling as only infants can—but now we are shedding our long garments and gradually reaching maturity. We are concentrating our forces. We are rapidly securing State laws in the advancement and the elevation of our profession. Our colleges are increasing their curriculums and teaching-forces. We are gaining the standing of professional men instead of the common, every-day 'horse-doctor.' In fact, we have become educators instead of a drag upon educators. We are now capable of nursing instead of being nursed. Therefore, let us educate the public and our medical boards to the importance of this branch of science, and, if necessary, do a little nursing at the same time.

"Too often a physician is called in to treat an infectious disease of the human family, and contents himself with making a simple diagnosis, and, after leaving directions as to treatment, departing without making an effort to trace the source of the disease. Can we call this negligence on his part? I hardly think so, for had he been taught comparative pathology at the college which he represents he would have known the importance of looking outside of the patient's house for the origin of the disease, and in all probability would not have left his patient until he had made a thorough investigation. The blame, then, rests upon the college and not on the physician.

"There are several reasons why a veterinarian should be employed as a member of the faculty of medical colleges. A successful physician must be a good sanitarian. He must be able to prevent disease as well as to cure. He must be educated to know the value and importance of veterinary science. He must be educated to the importance of the appointment of a veterinarian on sanitary boards. He must be impressed with the fact that the two professions are closely related and, for the public welfare, must go hand in hand. He can only be so educated at the hands of the veterinarian.

"A few years ago it seemed to be a matter of little importance whether a physician knew anything of the infectious diseases of the lower animals or not; but, since the researches in bacteriology have opened up a comparatively new field of science, we are forced to admit that contagious and infectious diseases are due to a specific micro-organism, and that certain micro-organisms are capable of causing disease in both the higher and lower animals. In many instances, however, the manifestation of disease may be so modified in the lower animals as to render it impossible for the physician who has had no training in comparative pathology to make a correct diagnosis, the physician in such cases failing to do his duty to his patients for the want of proper training. It would seem that certain branches of medical science were degenerating, although rapid strides have been made in certain directions. I refer particularly to the lack of interest shown in comparative pathology. In the beginning of the eighteenth century, when but little was known of veterinary science, Fleming states that eminent physicians devoted all their energies to the advancement of comparative pathology. These energies seem to have been peculiar to our forefathers, for where have we to-day, with the exception of three universities, a single individual, outside of the veterinary profession, or an institution manifesting any marked interest in comparative pathology? We also find that in the year 169 A. D., Galen, a noted physician of that time, is credited with having said that the education of a doctor was incomplete without a knowledge of the processes of disease among the lower animals.

"Our colleges seem to have drifted into a narrow channel which, year by year, becomes deeper and narrower, and from which it is difficult to extricate them. Medical men, not having their attention called to the importance of having comparative pathology taught in their colleges, have lost sight of the early efforts of the medical profession, and are content with a knowledge of human pathology alone. They do not realize that their sanitary boards would be much more efficient and that they themselves would gain a much more prominent position in their community as public benefactors. With men who have been trained in comparative pathology as members of boards of health, diseases of the human family will be more effectually controlled. The importance of legal recognition of the veterinary profession would be more fully appreciated, and the appointment of a qualified veterinarian on all such boards would result. New positions for veterinarians would be created, and our profession would advance still more rapidly than now. Sanitary boards would become more than mere collectors of statistics. Legislators would soon see the importance of providing such boards with sufficient funds to prosecute the work of controlling and stamping out contagions and infections. In fact, these boards would become investigators and advisers. What are the majority of them now? I have in mind a city board of health which does but little beyond the employment of men to sweep the streets, and no doubt many of you could mention other similar boards of health.

"The physician of this day and age should, to a certain extent, be an investigator, and in order to be an investigator in the proper sense of the term he must know comparative pathology.

"Beginning with the earliest history of medicine, we find that the physician at that time gained the greater portion of his knowledge of medicines by experimentation upon the lower animals. His knowledge of anatomy of the human body was gained only by a most superficial examination of the carcass of a dead animal. He noted the arrangement of the organs and their connection with each other, and took it for granted that the organs of man must bear a close relation to those of the lower animals, and that their functions and relations to each other must be similar. He based his principles of the treatment of disease of man upon this crude knowledge of physiology and anatomy of animals. In those days experimentation upon man and the dissection of the human body were practically impossible, and it became necessary, therefore, for the physician, to a certain degree, to study veterinary science in order to obtain a practising knowledge of medicine.

"At the age in which we are living, human subjects are more easily obtained; hence the anatomy of man many be studied without the aid of the lower animals, but not so with medicine. Here we still find it necessary to avail ourselves of the opportunity for study offered by animals. Actions, uses, and doses of new drugs are thus obtained. Antidotes for poisons are thus discovered, and antitoxines obtained for the treatment of disease in man. Similarity and identity of disease of man and animals are observed, and as animals furnish a very large proportion of our food we are beginning to realize more fully than ever that the source of some of the most fatal diseases of man is to be found in the lower animals."

A Government Investigation of Adulteration.—Mr. A. J. Wedderburn, a special agent of the United States Department of Agriculture, Division of Chemistry, has issued a circular, dated September 17, 1897, in which he announces that, by direction of Congress, the department is investigating the character and extent of the adulteration of foods and drugs. It is generally believed, he says, that adulteration, sophistication, imitation, and misbranding of foods, drugs, and liquors exist to a very great extent. Many of the States have enacted laws to prevent such practices, and it is very desirable to know how these laws have been enforced, and with what results. As the general public is largely interested in this matter, as it affects health, morals, and legitimate trade, it is thought proper to ask the co-operation of the press in securing accurate information on the subject. The publication of a simple request for information on this subject, to be furnished the paper asking it, or sent direct to the Chemical Division of the Department of Agriculture, will in all probability secure a large amount of valuable data which will materially assist in properly carrying out the work. As no matter can be of more importance to the people of the United States than that of the extent and character of the adulteration of foods and drugs sold to them, he asks for our co-operation in the work as herein indicated. "Please state," he says, "that the department simply desires a concise statement of facts which can be fully substantiated if necessary, and not theories."

The questions that Mr. Wedderburn wishes to have answered are the following:

(1) Do you know of any new adulterant? If yes, state what and how used.

(2) Would a national food and drug law assist in preventing adulteration?

(3) Would uniform food, drug, and pharmaceutical laws tend to promote efficiency and purity?

(4) Please suggest what would best promote the interests of consumers and legitimate manufacturers and dealers.

(5) What is your opinion as to the extent of damage done legitimate business by imitation of brands, packages, etc.?

(6) To what extent do sophistication, misbranding, and injurious adulteration exist?

(7) Have State laws aided in preventing adulteration? To what extent?

(8) Would a national law assist State officials in properly executing the local laws?

(9) Have adulteration, sophistication, and misbranding increased or decreased?

Ovarian Opotherapy.—Ovarian medication, says a writer in the *Journal de médecine de Paris* for September 26th, although of recent date, has led to numerous successful results. Like thyreoid medication, it is based on the principle that all the glands, whether provided or not with excretory ducts, give to the blood useful principles the absence of which makes itself felt after their extirpation or their destruction by disease. The *Revue pratique des travaux de médecine*, says the writer, publishes a good *résumé* of studies on the subject.

Professor Werth, of Kiel, was the first who made use of the ovarian treatment in the troubles which accompany the disappearance of the secretion of the ovary following either the menopause or surgical intervention. Out of ten cases, in two only did the treatment not bring about any result; in the eight other cases a diminuation of the general pains, of the headache, of the loss of appetite and sleep, of the palpitation, and of the feeling of anguish was obtained.

Shortly afterward Dr. Mainzer, of Berlin, published the results of his investigations concerning the ovarian treatment of functional troubles following double ovariotomy. He obtained a considerable attenuation in the symptoms by administering to his patients the raw ovarian substance of the cow or of the calf in daily amounts of from seventy-five to a hundred and fifty grains. At the present time, it has been demonstrated that such large doses are not necessary. M. Mond saw five analogous cases in which amelioration was also obtained by this treatment; also two other cases in which the troubles had been caused by the cessation of menstruation at the menopause, and four cases of amenorrhœa due either to atrophy of the genital organs or to neurasthenia.

Laudan gave his patients ovarian tissue to combat the nervous troubles which accompanied the suppression of the ovarian function following ablation of the uterus and its annexa, and he always ascertained that, for a short time at least, the symptoms disappeared.

Spillman and Etienne also obtained good effects from the administration of the fresh ovaries of the sheep, of the dried ovarian substance, and of the ovarian juice in chlorosis. This treatment acted, according to these authors, by facilitating the elimination of the toxines, increasing the red globules, and causing the reappearance of menstruation. Mairet, Jayle, Touvenaint, and Jouin also published observations in which this medication had led to favorable results in the treatment of amenorrhœa and chloro-anæmia.

Guerder, notably, reported the case of a woman who had reached the menopause and suffered from neuralgia, congestive symptoms, profuse sweating, and vertigo. Two capsules, each containing about three grains of ovarian substance, were given every day, and after the third day the troubles ceased; the patient then continued the medication, taking two capsules every three days, and the symptoms had not returned.

On the whole, concludes the *Revue*, ovarian medication seems destined, like the thyreoid treatment, to render great services to medicine.

A Case of Death from Lightning Stroke.—Mr. C. F. Glinn reports the following case in the *Lancet* for October 9th: The patient was found lying at full length on the ground with his face downward, and his right hand in his trousers pocket. A small pool of blood was under his head, and his hat was lying about a yard away torn to pieces. Both cloth leggings were torn almost from top to bottom, and a small piece of one was lying near the body. On examination, the author found over the situation of the upper anterior angle of the left parietal bone a wound of the size of a penny, the soft structures of which were quite disorganized down to the bone, but the bone itself appeared uninjured. The hair round the wound was burned and a good deal of blood was coagulated in the hair around. From the direction of this wound a red line of hyperæmia about a quarter of an inch broad could be distinctly seen running in an oblique direction down the neck and over the middle of the clavicle to the epigastrium. The hair of the neck and body was burned and singed along this line, and there was a strong smell of burning when the clothes were removed; at the epigastrium this line merged into a diffused hyperæmia which involved the whole of the lower part of the trunk and both thighs; the hyperæmia ended at the knees, but a red line similar to that above described ran down the outer side of the right leg and foot to the little toe (the inner surface of the right boot was torn along a line corresponding to this). On the lower surface of the left foot, just below the instep, was a fresh bleeding wound of the size and shape of a threepenny-piece. There were two bullæ of about the size of a man's thumb in the left groin. On removing the body the wound on the head began bleeding again so freely that a considerable pool of blood (about half a pint) was formed; this appeared to indicate an abnormally fluid state of the blood. The face was very livid. There was no watch or any other article whatever found in the pockets. There was an iron wire round the brim of the hat, apparently used for stiffening purposes; the hat itself was torn to pieces, leaving this exposed.

The Diagnostic Value of the Symptoms which for a Long Time precede the Manifestations of General Paralysis.—At a recent meeting of the International Congress of Neurology, Psychiatry, Medical Electricity, and Hypnology, a report of which is published in the *Progrès médical* for September 25th, Dr. Thomsen, of Bonn, said he thought the fact that general paralysis was often not recognized by practising physicians, even in cases that were very evident to the neurological specialist, might be explained by the following reasons: 1. The duration of general paralysis was often very much longer than was believed; a duration of five, seven, or ten years was not rare. 2. In the beginning of the disease the purely physical symptoms might prevail to such an extent that an erroneous diagnosis of neurasthenia or of cerebral syphilis might be made. Moreover, often very long and very considerable remissions occurred, during which all the psychical symptoms might disappear. The anatomical basis of paralysis was a process that underwent many remissions and attacked very different parts of the nervous system, and from this there resulted very pronounced differences in the symptoms and progress of the disease. When paralysis was manifest the anatomical process was well advanced. 3. It was not sufficiently known that certain characteristic symptoms of paralysis might precede the manifestation of the disease for a long time—in fact, for many years—as more or less isolated premonitory symptoms. The Argyll Robertson symptom, Westphal's sign, transitory ophthalmoplegias, paralytic or aphasic attacks, troubles of articulation, atrophy of the optic nerve and of several others less significant, belonged to these very important premonitory symptoms. In cases in which these symptoms were ascertained in taking the patient's history or on physical examination it was very often possible to make certain or probable diagnosis of general paralysis a long time before the manifestation of psychical symptoms. Taking them into consideration often prevented the possibility of confounding the disease with neurasthenia or cerebral syphilis. It was very important to make the diagnosis of general paralysis in the first stage of the disease.

M. Regnier, of Paris, agreed with Dr. Thomsen that the greatest attention should be paid to the first physical signs of progressive general paralysis.

M. Antonelli, of Paris, said that confusion in diagnosis might arise between general paralysis and syphilis in ocular troubles. He thought that in the beginning, however, this was not of great importance. Circulatory troubles of the papilla were often found in the beginning. Dr. Thomsen, he said, attached great importance to the physical signs; he thought this tendency too exclusive; moral and mental premonitory troubles should also be sought for, as cerebral asthenia was with difficulty distinguished from the simple troubles of general paralysis in the beginning.

Dr. Thomsen said that pupillary inequality was often found in other diseases also, as well as atrophy of the optic nerve, and he thought these two symptoms were not sufficient in themselves. He said that he did not attach great importance to syphilis; he attached great importance to the physical symptoms, and he thought that a sure diagnosis could not be made when they were not present, for they were always found in the beginning, while the psychical symptoms might not exist.

Accidents Due to the Employment of Antipyrine.—The *Gazette hebdomadaire de médecine et de chirurgie* for September 26th contains an article on this subject in which the writer refers to a thesis by M. V. Clément which, he says, is particularly instructive. The author devotes considerable space to the nature of the accidents which follow the immoderate use of antipyrine, giving a detailed account of those pertaining to the skin, the viscera, the nervous system, and the circulation, from which the following practical conclusions are reached: 1. Antipyrine should never be prescribed for very old people, for subjects attacked with non-compensated cardiac lesions, or for those in an adynamic condition. 2. In influenza and erysipelas it should always be associated with quinine and, in convalescence, with strychnine or caffeine. 3. In arthritic subjects, who are nearly always dyspeptics, it should be associated with an alkali (sodium bicarbonate or sodium benzoate) and prescribed in solution. If it can not be taken except in a capsule, the patient should drink a quarter or half a glass of Vichy immediately after taking the capsule. 4. In tuberculous subjects twelve grains at a time should not be exceeded, and the condition of defervescence should be carefully watched. It is well in this case to combine alcohol and antipyrine and give the latter in solution. 5. In diabetic subjects the association with alkalies is obligatory. 6. In children antipyrine may be administered without inconvenience even in amounts proportionately larger than in adults, provided it is given in divided doses. This tolerance depends as much upon the integrity of the renal function as upon the mode of administration, which should nearly always be by the solution.

The writer calls attention to the fact that antipyrine given in powder, sometimes even in solution, has a special effect upon the mucous membrane of the stomach, and that this may be avoided by employing hypodermic injections. An injection done aseptically never gives place even to the least cutaneous poisoning.

The treatment of these accidents consists, naturally, in suspending the use of the drug. For the cutaneous accidents simple measures are generally sufficient. If it is a serious case of poisoning, injections of ether and especially of caffeine should be resorted to; during convalescence alcohol, digitalis, strychnine, and small doses of quinine render great service.

Nasal Hæmorrhage.—The October number of the *Scottish Medical and Surgical Journal* publishes an article on this subject by Dr. G. Hunter Mackenzie, in which the author deals with certain varieties of hæmorrhage. Persistent and recurrent epistaxis which occurs in otherwise healthy individuals without discoverable lesions or exciting causes, and without hæmorrhage from any other organ or region of the body, he says, not only is annoying to the individual, but may also be productive of very grave results.

This variety of hæmorrhage, he says, is most frequently met with between the ages of fifteen and twenty-five years. The bleedings are frequent and severe; they may occur on very slight provocation, such as blowing the nose, or even without this slight cause, and are eventually productive of great anæmia and weakness. The bleeding may be from one or both nostrils, or from the tear-duct. On irritation by means of a probe of the membrane covering the cartilage of the affected side, blood will begin to ooze, at first very slowly, but ultimately with greater freedom. No other area inside the nose responds to irritation in this way, and the cartilaginous area in an individual with no history of epistaxis does not do so. The average size of the hæmorrhagic area is about equal to that of a silver threepenny piece.

Dr. Mackenzie states that this variety of hæmorrhage is closely related to those that are associated with that condition of the blood and the blood-vessels known as hæmophilia and that connected with disordered menstruation. The locality of this hæmorrhage is also the cartilaginous sæptum, so far as hæmophilia is concerned.

Nasal hæmorrhage may arise from erosions or ulcerations which principally affect the sæptum, or from the peculiar and little-understood lesion called "perforating ulcer of the sæptum." This variety, the author thinks, is seldom excessive, and does not tend to produce the alarming symptoms met with in that form in which there is no discoverable lesion.

Two forms of growth are characterized, he continues, by the presence of nasal hæmorrhage. The first is a benign, somewhat rare variety of polypus of the nature of a cavernous angeioma, also located on the anterior portion of the sæptum, and known as "bleeding polypus of the nose." It is usually met with in women about the period of puberty, and a curious point about it is that it is almost invariably found on the left side. The other form is present in old people, it has many of the naked-eye characteristics of ordinary mucous polypus, and is situated on the upper and posterior portion of the sæptum. This growth is of a malignant nature, but, in its early stages at least, it is so benign in appearance as sometimes to deceive experienced observers.

Bleeding from the nose is a frequent occurrence in interstitial nephritis. It is said to occur at all stages, but mostly at the beginning and end of the disease. It is also met with in threatened uræmic attacks, on account of the increased arterial tension. Hence the propriety of examining the urine in all cases of recurrent epistaxis, especially in elderly people. Its relation to apoplexy has been frequently discussed. By some it is maintained that it tends to ward off such attacks, and hence may be regarded as beneficial.

Concerning the treatment of nasal hæmorrhage, the author states that it may be local or general. The patient is placed in a good light, the tip of the nose is tilted, or a speculum is inserted, and the bleeding area located. A solution of cocaine is applied to the anterior sæptum, and the part is then subjected to linear cauterization with the electro-cautery. As a rule, says Dr. Mackenzie, this at once checks the bleeding, and the cicatrices which subsequently form completely prevent any recurrence. In bilateral hæmorrhage the application of the electro-cautery should, if possible, not be made to both sides of the sæptum at the same time, as the cartilage is apt to slough in its entire thickness, and a perforation result. Not that such a perforation is of any great importance, but it is better to avoid it. Where the galvano-cautery is not at hand, an almost equally good result may be produced with chromic acid or solid nitrate of silver. This treatment is also of service in cases characterized by the presence of erosions or ulceration of the mucous membrane. From what has been said in regard to the locality of the bleeding, says the author, it will be obvious that pressure by the anterior nares is likely to be effectual in causing temporary arrest of the hæmorrhage, but cauterization alone can induce a permanent cessation.

In cases of bleeding polypus of the nose, which, says the author, is always located on the anterior part of the cartilaginous sæptum, the treatment is extremely simple. The growth should be removed with the electric or cold snare, and in the latter instance its area of attachment ought subsequently to be freely electro-cauterized. In malignant polypus the disease ought, if possible, to be treated on ordinary surgical lines, but, as often happens, if this can not be done, cotton wool charged with some styptic ought to be applied to the bleeding surface.

Among other local remedies for epistaxis, continues Dr. Mackenzie, are douching the nose with a solution of warm water, the temperature of which should not be less than 158° F., turpentine tampons to the anterior nares, and the application of cocainized cotton wool (although the secondary effect of cocaine is said to be to increase the hæmorrhage). Other remedies, some of which are more popular than scientific, are raising the arms above the level of the head, the application of cold to the back, blistering over the liver, and the administration of digitalis, antipyrine, and ergot.

The author, however, is of the opinion that none of these equals the electro-cautery, or chromic acid, or solid nitrate of silver in effectiveness, and accordingly one of these, preferably the first, ought to be used in all cases of severe recurrent epistaxis. The accessibility of the bleeding area in the great majority of cases renders such an application a matter of extreme ease, and demands the minimum amount of special knowledge or skill of the practitioner.

Christian Greece and Living Greek.—This is the title of a book which Dr. Achilles Rose, of New York, announces that he has in readiness for the press, in the form of a monograph giving the results of the latest scientific researches in regard to modern Greek history, language, and literature. The book is written in the form of popular lectures, most of which have been delivered and been enthusiastically received by critical audiences.

The following is the table of contents:

Chapter I. An Historical Sketch of Greek. Lecture delivered before the German Medical Society of the City of New York.

Chapter II. The Proper Pronunciation of Greek. Lecture delivered in Hosack Hall, Academy of Medicine, New York.

Chapter III. The Byzantines. Lecture delivered before the Society of Literary Advancement, New York.

Chapter IV. The Greeks under Turkish Bondage.

Chapter V. The Greek War of Independence.

Chapter VI. The Kingdom of Greece before the War of 1897.

Chapter VII. Greek as the International Language of Physicians and Scholars in General. Lecture delivered before the Academy of Medicine, New York.

In the first chapter, says the announcement, an historical sketch of the Byzantine Empire is given in order to show the most extraordinary misrepresentations which have existed until recently in regard to this history. In the second chapter another historical sketch exposes the erroneous views which have prevailed in regard to the relation of the Greek of to-day to the Greek of the classical period, at least the Greek of the Attic orators; Chapter III shows what absurd ideas have been in vogue in regard to Greek pronunciation. The fourth chapter gives an account of the misery into which the Greek world was thrown during the centuries of Turkish bondage, of the wonderful rising of the Greek people from the lethargy caused by slavery, and of their spiritual and political resurrection. The next two chapters treat of the most incomprehensible of all the wrongs done to this noble race, the treatment received from the European powers while it was struggling for liberty after long centuries of terrific vicissitudes, under circumstances which presented more difficulties than any other nation had encountered, and also the wrongs done to the Greeks during the last period, that is, since a part, a part only, of the nation was set free. The last chapter treats principally of the necessity of introducing better methods of teaching Greek in school.

The volume will be tastefully printed (by the Knickerbocker Press) in octavo form. It will comprise about 350 pages, and will be placed in the hands of the printer as soon as sufficient advance orders have been secured to justify the investment. The book will be published by Messrs. G. P. Putnam's Sons, of New York and London.

The subscription price has been fixed at $1.50, payable on the delivery of the volume.

The book may be ordered from Dr. Achilles Rose, No. 126 East Twenty-ninth Street, New York.

In a note dated October 19th, Dr. Rose says:

"Last night I was permitted to address the New York County Medical Association, and said: Mr. President, Ladies, and Gentlemen: Allow me to say a few words in behalf of a noble but unfortunate people to whom we, the world of science, are more indebted than to any other.

"As it appears, an infernal work is in progress now. The European powers, united with the Turk, seem to be determined to bring back the whole Greek world into Turkish slavery. The Sultan is preparing a wholesale massacre of the Cretans. He has addressed a note to the powers to help him to disarm the Cretans and the Mohammedans in Crete. After this disarming has been accomplished he will see that the Mohammedans get all the arms, and he will appoint the day, the hour, and the duration of the massacre. Such was the mode of procedure in Armenia. As the Cretans will not willingly lay down their arms and allow themselves to be slaughtered like the Armenians, he has called the powers to his aid. After the massacre the Turk and the powers will, as they have done before—to some extent even in this our very country—compel the press to deny everything.

"All this concerns us men of science. When we read the history of Christian Greece—unfortunately very few know this history—we shall see that we are not less indebted to Christian than we are to ancient Greece. We shall further find that this very day there live in Greece true men of science to whom we are indebted, whom we have to admire. Allow me to hand you a little paper on Greek anthropology which gives you an idea of one of these men and his noble scientific work. Together with this paper allow me to hand you a circular which explains itself. I wish you to sign it with your names. Your names will be added thus to some of the best of the land. Some colleague has suggested having the names of the original subscribers published on the back of the book, in order to identify and concentrate the Philhellenes of this country.

"It is the duty of every one of us who loves liberty, justice, and truth to raise his voice against the greatest shame of this century, perhaps of all history. If a union of Philhellenes can be established, there will be a possibility, for one thing, of putting an end to the calumniations of the daily press, at least of this country."

A Case of Esthiomenic Menstrual Ulcer of the Nose.—The following exceptional case is recorded in the October number of the *Edinburgh Medical Journal* by Dr. H. Macnaughton Jones, who states that he has observed the patient closely and constantly for a year, and conducted every dressing and manipulation required during this period twice a day: In November, 1895, the patient consulted the author for a small ulcer situated on the inner side of the column of the right nostril. The ulcer was flat and covered with a thin brown scab. The edges were very slightly raised, and there was a red blush extending for a little distance around. At the menstrual period the patient became much worse. The nose had been affected for seven months, but in the intervals between the catamenia the inflammation subsided, recurring with each period lately with marked severity. A few years before the patient had suffered with amenorrhœa and erratic menstruation; the periods were still very scanty and lasted at times for only a few hours.

The facial characteristics of the patient and the obstinacy and increasing severity of the disease, added to its local features, led the author to the conclusion that the ulcer was probably of tuberculous character. He removed the scab, applied a chromic-acid solution to the surface, ordered an ichthyol and iodoform ointment for application, and placed the patient on a course of arsenic and iron, with general tonic treatment. After this the nose improved, but with the following menstrual period there was an exacerbation of all the symptoms, radiating pains, increase of redness, and rapid spreading of the ulcer, with formation of the scab. Perchloride-of-iron solution was twice applied, but, in spite of the use of various astringent and antiseptic unguents and douches, and the internal administration of tonics, cod-liver oil, and thyreoid extract, the affected zone increased, and the ulcer at the menstrual period in January, 1896, assumed quite typical appearances. Seeing that the disease was progressing, the author determined to scrape the ulcer and apply an acid, but the hard, leatherlike character of the slough, and its extreme tenacity and incorporation with the subjacent tissue, made any attempt at scraping this mass impossible, and it had to be shaved off with a knife before applying the alembroth wool which was tried as a dressing. This was repeated twice during January, and was followed by considerable improvement; but just before the February period there was a recurrence of all the old symptoms, with rapid spreading of the inflammation and an increase of the black slough; the patient on some occasions had to be held down in bed and became semi-delirious from the agony which she suffered in the nose and the side of the face. At this time a distinguished dermatologist saw the patient in consultation with Dr. Crocker and the author, and he regarded the ulcer as one of a cancroid nature akin to cancrum oris, and expressed the view that it would spread and in all probability destroy the lower portion of the nose. A blush, continues the author, had now extended to the skin of the left nostril and there was from the nose itself a sickening and most unpleasant odor. At the times when the recurrences took place, all through the illness, the skin, especially of the right cheek, became injected and the follicles were enlarged. This subsided shortly after the menstrual period ceased. The author decided that active operative interference was necessary, and the entire slough was cut off and fuming nitric acid applied to the raw surface; at the same time a triangular piece was taken from the upper lip, which had become involved, and the acid applied here also. This was on the 7th of February, and antiseptic dressings and douchings of boric acid and perchloride of mercury were subsequently used. This operation, says Dr. Jones, was followed by decidedly good results, but there still remained the tendency to the formation of fresh crusts. On the 14th of February the slough again deepened and the author removed it, this time applying the acid nitrate of mercury. On the 24th the skin in front of the left vestibule broke and a crust formed; this was removed and chloride-of-zinc paste was applied. The disease was now making its way to the left side of the sæptum and extending to the lip, in spite of operative interference, and another operation was performed in which the author used chloride-of-zinc paste instead of nitric acid, as the former was more efficient. Sections of the removed portion were examined on different occasions with the results that no evidence of tubercle or malignancy could be detected. After each operative interference the surface granulated, the sore healed from the circumference, and gradually cuticle formed. During March and part of April the column was so far threatened that the cartilage of the aperture became thin and translucent. The recurrences on the left side in March, April, and May, when the part was almost healed, took place before each menstrual period, and were each time checked by operative interference. In April the author began the use of salactol and quinosol in dressings, and this was continued to the end of the case. The salactol was used as a light application for a few seconds to soften any forming crusts; the quinosol was used as a wash, and a nasal plug of cotton-wool was saturated with a one-in-six-hundred solution. The zinc paste was also used, and on several occasions the contraction and healing over of the granulating surfaces were hastened by the application of the galvano-cautery point.

Salactol, says Dr. Jones, is a compound of hydrogen peroxide, sodium salicylate, and sodium lactate. He states that it had the best effect of any local application in softening the scabs and enabling him to remove them. Quinosol kept the sore healthy and clean and decidedly encouraged the healing process. Photographs of the nose, continues the author, taken after it had completely healed showed how perfect the reparative process had been; in fact, he adds, except on close inspection, no mutilation was observable, and there was no contraction to speak of, as the result of the operative procedures. The patient is at present in good health, and the nose has given her no trouble whatever since last November. She is perfectly well, and there is no noticeable disfigurement.

The Antemetic Action of Iceland Moss.—In the *Journal des praticiens* for September 25th there is an article by M. Degry and M. Bricemoret, of which the following is the substance: Since the year 1673, at which time the employment of Iceland moss as a medicament was advocated by Borrichius, until the present day the history of this plant may be summed up in a few lines. It was highly recommended and still more employed as a specific for phthisis, although it did not render in this affection other service than that of co-operating with alimentation, and yet its nutritive properties may be doubted when its chemical composition is examined.

Among the numerous works that have given any attention to the subject there are some that call attention to the fact that this moss contains a bitter substance which gives to the plant tonic, stomachic, and even laxative properties.

At the present time in France scarcely anything is made use of but its emollient properties in decoction; saccharure, jelly, and tablets have also been made from it; the formula for the latter is still to be found in the official pharmacopœia.

The authors state that they have made use of the bitter substance of this moss in the treatment of digestive troubles designated under the term atonic weakness of the digestion, and in the forms of dyspepsia that are accompanied by a certain degree of anæmia. They administered the drug not in decoction, for even boiling water dissolved only very small quantities of its principal bitter, but in the form of a tincture obtained by percolation with one part of the moss and five parts of alcohol. The results of their experiments were not all that were expected, but interesting properties of the moss were revealed, properties so remarkable that the authors have thought it useful to record the observations, twenty-five in number, some of which are given in detail as examples of the efficacy of this drug, and their conclusion is that the moss possesses an antemetic property that no other drug has in so high a degree. Hysterical vomiting, however, is most rebellious to this medication. It is impossible to state exactly in what conditions the best results will be obtained, for, like all other drugs, this may fail.

The physiological study of this substance led Kobert to conclude that in doses of a grain and a half it would excite the movements of the stomach and of the intestine, increase the red and white globules, and stimulate moderately the central nervous system, properties which may find their employment in chlorotic subjects in whom there are loss of appetite and constipation.

A Tendency to Bending of the Bones in Cretins under Thyreoid Treatment.—In the *Lancet* for October 2d Dr. T. Telford-Smith states that he has found that during thyreoid treatment the rapid growth of the skeleton leads to a softened condition of the bones, which results in a yielding and bending of those which have to bear weight; and as cretins under treatment become more active and inclined to run about this tendency to bending has to be guarded against. The author cites a case as an example, and states that several of the photographs of cretins before and after thyreoid treatment exhibited by Dr. W. R. Parker, of Kendal, and Dr. John Thomson, of Edinburgh, at the British Medical Association meeting at Carlisle, showed this increased bending of the legs very clearly. Cretins under thyreoid treatment should therefore, he thinks, be watched for any bending of the bones of the legs, and if it appears, the child should not be allowed to walk for a time, or the legs should be supported by light splints. The diet should be generous, and the child should get plenty of sunlight and open air. The author adds that the administration of cod-liver oil and Parrish's food would probably prove beneficial at the same time.

Lectures and Addresses.

LECTURES ON CERTAIN ASPECTS OF DIABETES.*

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LECTURE I.

PHYSIOLOGY AND GENERAL PATHOLOGY OF SUGAR EXCRETION: THEORIES REGARDING THE PRODUCTION OF DIABETES MELLITUS.

To appreciate the changes in metabolism which occur in diabetes mellitus, one should first be familiar with the physiology of the food stuffs, particularly the carbohydrates, in health.

The most important carbohydrate of the food is starch. By the action of diastase, a ferment present in greatest abundance in the salivary and pancreatic secretions, this insoluble starch is converted by successive stages or simultaneously into soluble starch (amidulin), erythrodextrin, achroodextrin, isomaltose, and maltose. As these products pass into the intestinal wall and portal vein they undergo further changes into glucose or dextrose. Other carbohydrates taken in the food are cane sugar, milk sugar, and cellulose. Cane sugar, or saccharose, is split up in the alimentary canal, owing to the action of acids, ferments, and bacteria, into its two components, grape sugar and fruit sugar, and when ingested in moderate amounts is absorbed as such. Only when it is taken in large quantities does it pass unconverted into the circulating blood. Fruit sugar, or levulose, is taken into the blood unchanged. Milk sugar (lactose) also reaches the circulating blood without undergoing any change. Cellulose is probably never absorbed. Thus, the portal vein carries from the intestinal wall toward the liver a stream of carbohydrates varying in composition according to the nature of the food taken. These consist of glucose, levulose, lactose, saccharose, and traces of dextrin and maltose. The richness of the portal blood in carbohydrates naturally varies according to circumstances. In dogs that are fasting and in those fed on flesh and fats the amount is between 0.10 and 0.15 per cent. (von Noorden), while in animals fed on carbohydrates von Mering has found that the quantity may be increased to 0.4 per cent.

What becomes of these absorbed carbohydrates? The work of Claude Bernard and subsequent investigators furnishes an answer to this question. So long as the quantity of carbohydrates passing to the liver by way of the portal vein remains moderate in amount, it matters little whether these carbohydrates are in the form of grape sugar, fruit sugar, milk sugar, or of other kinds, the result is the same. The liver acts on the carbohydrates and converts them into glycogen, which is deposited in the liver as such, and probably also in loose combination with albumin. The liver, then, acts as a reservoir for the carbohydrates, and may store up as much as fourteen per cent. of its own weight of glycogen. This function of the liver is a very important one, as it is by means of the interposition of this glycogen reservoir that the amount of sugar normally circulating in the blood is regulated. Analyses for sugar in the blood, in the hepatic veins, and in the various arteries throughout the body have shown the percentage to vary within very narrow limits—namely, from 0.12 to 0.18 per cent. The liver may then be said to regulate the proportion of sugar leaving it. This sugar which leaves the liver is in the form of grape sugar.

Glycogen is not alone contained in the liver. It is also present in the muscles. It is estimated that the amount contained in the whole of the muscular system about equals that present in the liver. The muscles are believed to have the power of elaborating their own glycogen from grape sugar. It is supposed that the liver not only has the power of converting the carbohydrates brought to it into glycogen, but also that of recoining it back again into grape sugar. Hence, in this way, most of the glycogen stored up in the liver is disposed of, although a very small percentage passes out into the hepatic veins unchanged. From this recoined grape sugar and the small amount of glycogen which passes into the general circulation the muscles form the glycogen contained within them.

Seegen denies that glycogen is the source of sugar and suggests that the liver converts peptone into sugar. He found that when peptone solutions were introduced into the stomach of dogs the liver sugar was increased by from fifty to two hundred per cent. He therefore holds that sugar formation is a normal function of the liver.

Pavy has an entirely different view from that generally held regarding the absorption and ultimate destination of the carbohydrates. He does not believe that most of the carbohydrates ingested reach the liver as grape sugar, there to be converted into and stored up as glycogen and again recoined into grape sugar and supplied to the tissues as such, according to the demand. He practically refutes the glycogen theory. According to Pavy, the ingested carbohydrates are first subjected to a breaking up and hydrating process by action of the ferments in the alimentary tract. This altered carbohydrate is then brought under the influence of the living protoplasm present in the cells of the villi of the small intestine. He believes that the living protoplasm of these cells plays a very important part in the further transformation of the carbohydrates. By its action a portion of the carbohydrates ingested becomes partially transformed into proteid, giving rise to a proteid carbohydrate. This is absorbed chiefly through the lacteals, and only a small portion is taken up by the branches of the portal vein. Of the remaining portion of the carbohydrate, the greater part is converted by the cell protoplasm into fat, which is absorbed entirely by the lacteals. According to Pavy's view, then, by far the largest part of the carbohydrates ingested is transformed into proteid carbohydrates and fat, both of which reach the general circulation by way of the lacteals. Whatever absorbed carbohydrate escapes application in the villi to the construction of proteid or the formation of fat, reaches the liver in the form of sugar by way of the portal vein. Here it is converted into glycogen by the action of the protoplasm of the liver cells. This glycogen is non-diffusible and is not converted into sugar and as such allowed to pass into the general circulation, as many hold, but, by protoplasmic action, is applied to the construction of proteid or the formation of fat. Pavy supports the view that the kidneys eliminate normally minute traces of sugar. He also finds sugar present in the blood in definite percentages. He holds that in order that the urine should not contain more than the minutest traces of sugar it is necessary that the carbohydrates must not enter the general circulation as free sugar. The view he advances regarding the absorption of the carbohydrates fulfills these requirements.

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* Delivered before the Post-graduate Class of the Johns Hopkins University, May 24, 1897.

It is now an established fact that carbohydrates can be formed from proteids. Pavy believes this to be due to a splitting-off process, while Pflüger holds that there is a complete decomposition of the albumin molecule and a building up of the carbohydrate molecule. Minkowski maintains that out of every hundred grammes of albumin decomposed in the body forty-five grammes of carbohydrates are formed. In this way glycogen can be manufactured in the liver from the carbohydrates derived from the proteids ingested.

Fate of the Carbohydrates. I. *In Ordinary Nutrition.*—While carbohydrates formed from the carbohydrates and proteids of the food are always on hand for the use of the organism, they are also always in demand. They are consumed by the body cells, chiefly those of the muscles, and by their combustion produce heat and energy. Owing to the fact that we have two reservoirs, the liver and muscles, storing up carbohydrates, and to the fact that normally there is no loss of sugar in any of the excretions, except in the urine in minutest traces, the amount of grape sugar remains constant in the blood notwithstanding the varying supply. A deviation from these relations existing under normal conditions of nutrition may occur in one of two ways: (1) The supply of carbohydrates may be insufficient; (2) the supply may be greater than is required.

II. *When the Supply of Carbohydrates is Insufficient.*—What happens when an insufficient supply and an increased demand for carbohydrates occurs, as, for instance, when but little food is taken and hard work is performed? For a few hours or days the amount of glycogen in the liver is drawn upon. Eventually, however, the supply in the liver and muscles becomes almost exhausted, yet an analysis of the systemic blood shows that the percentage of sugar remains within the normal limits—*i. e.*, between 0.12 and 0.18 per cent. Under such conditions the organism does not suspend the production of sugar, but, as is now generally believed, draws upon the fat deposited in various parts of the body, transforming it into carbohydrates, and thus making up for the diminished ingestion of the latter. This fat, however, must be converted into a form that can be easily used by the organism. That grape sugar is the form of carbohydrate into which the fat is converted is fairly conclusively proved by the fact that the grape sugar in the blood remains in constant percentage, notwithstanding the deficient ingestion of carbohydrates in the food. The liver is believed to be the organ where this transformation takes place. Von Noorden regards the facultative formation of sugar from fat to be an absolutely proved fact.

III. *When Carbohydrates are ingested in Excess.*—The fate of the carbohydrates in this case depends on circumstances. Within certain limits the excessive amount can be stored up as glycogen in the liver and muscles. A limit to this storage is eventually reached, however, as it is believed that the human organism can store up only about three hundred grammes of glycogen (von Noorden). What happens with the excess of the carbohydrates depends on whether there is a sudden flooding of the system with carbohydrates or whether there is a more moderate overingestion lasting a series of days. When the latter condition exists the excess of carbohydrates is disposed of by the organism converting it into fat which is stored up in the connective tissues throughout the body.

The conversion of carbohydrates into fat takes considerable time, so that, when there is a sudden flooding of the system with carbohydrates, some of the excess is disposed of by the elimination of a certain amount of sugar in the urine. We have seen that the blood normally contains between 0.12 and 0.18 per cent. of grape sugar. When, however, there is a sudden ingestion of an enormous amount of carbohydrates, the liver and muscles can not store it all up as glycogen, nor can the organism convert it all into fat. The result is that the blood becomes overcharged with grape sugar. As soon as the percentage in the blood reaches 0.2 per cent., the kidneys, which normally excrete the minutest traces of sugar, begin to eliminate the excess, with the result that we have produced what is known as alimentary glycosuria. This is purely a physiological process and has nothing whatever to do with true diabetes mellitus. It is important for the physician to remember that such a physiological glycosuria may occur, and that diabetic and alimentary forms of glycosuria are often confounded.

I quote from von Noorden some important points relating to physiological and alimentary glycosuria.

(1) Traces of sugar (one to two decigrammes to the litre) are present in the urine under ordinary conditions of nutrition, but as none of the usual sugar tests are sufficiently delicate to give any indication of this small percentage, healthy urine may be regarded practically free from sugar.

(2) Sugar is present in the urine after the ingestion of various saccharine substances, provided they have been taken in considerable amount within a brief period.

(3) The sugar in the urine under these circumstances is always of the same kind as that ingested in excess; if it be glucose, we have glycosuria; lactose, lactosuria; levulose, levulosuria; saccharose, saccharosuria.

(4) The assimilation limit, that is to say, the limit up to which the intake of sugar must be raised in order that the urine may become saccharine, varies according to the different kinds of sugar.

Milk sugar appears in the urine after the ingestion of more than 120 grammes; cane sugar, after the ingestion of more than 150 to 200 grammes; fruit sugar, after the ingestion of more than 200 grammes; grape sugar, after the ingestion of more than 200 to 250 grammes.

The figures given are only approximate and refer to the amounts taken when the individual is fasting.

(5) A positive reaction to the sugar test appears ordinarily in from three quarters of an hour to an hour after the ingestion of a single large dose, and continues for from one to three hours. The total amount excreted equals, in the case of cane sugar, 2.8 per cent. of the amount taken, of grape sugar one per cent., and of milk sugar 0.8 per cent.

(6) The assimilation limit for starch is unattainable; that is to say, starch may be taken in any amount without resulting in an excretion of carbohydrates in the urine. Evidently, in this case, digestion and absorption consume so much time that a sudden flooding of the blood with carbohydrates can not take place. This is a fact of much importance, for it signifies that those who excrete sugar after the ingestion of starch have a morbidly depressed assimilation limit, and the existence of diabetes mellitus is to be strongly suspected.

Somewhat analogous to alimentary glycosuria is puerperal lactosuria. The condition was discovered by Blot in 1850, and was at first described as puerperal glycosuria. Owing, however, to the later discovery in 1877 by Hofmeister and Kaltenbach that it was milk sugar and not grape sugar that was eliminated in the urine, the condition has since been known as puerperal lactosuria. The affection is found when there is an interruption to the withdrawal of milk, as when, because of excoriation of the nipples, the nursing woman has to refuse the breast to the child, or when the infant can not nurse properly. Occasionally the condition is the result of supersecretion, the child being unable to take the full amount of milk secreted. Lactosuria also follows the retention of milk resulting from the obstruction of the lacteal ducts following inflammation. It is very common in the urine of women two or three days after confinement, and not infrequently a day or two after weaning the child. The amount of milk sugar in the urine is usually small, although it may reach as high as three per cent., and be attended by all the usual symptoms of diabetes, as in a case reported by Ralfe, of London.

HEPATOGENOUS FORMS OF GLYCOSURIA.—We have seen that under normal conditions the liver is so able to regulate the amount of sugar passing into the vascular system that glycosuria does not result. A form of glycosuria, termed hepatogenous glycosuria, may occur in functional or organic disturbance of the liver. There are two forms of hepatogenous glycosuria, the experimental and clinical forms.

(1) *Experimental Forms.*—Glycosuria as a result of experimental research dates from about the middle of this century with Claude Bernard's puncture of the medulla at the extremity of the calamus scriptorius in the fourth ventricle. Glycosuria of several hours' duration resulted from this procedure. It was found that no glycosuria followed if the liver had been previously deprived of most of its glycogen by enforced fasting for a considerable time, by chasing the animal about, inducing pyrexia, ligation of the ductus choledochus, or other means. The conclusion drawn from this observation and from the experiment in general is, that a centrifugal stimulus passes out from the seat of puncture to the liver, causing the latter to suddenly discharge its store of glycogen. The glycogen is discharged as grape sugar, and owing to the sudden increase of grape sugar in the blood glycosuria results.

Since Claude Bernard's experiment many attempts have been made to produce glycosuria by stimulating or irritating various parts of the nervous system. Many of these have been effectual in producing temporary glycosuria. The only one of all the numerous experiments to invariably produce glycosuria in animals, by irritations of the nervous system, is the original experiment of Claude Bernard, in which the so-called diabetic centre is irritated.

(2) *Clinical Forms.*—It has been observed that glycosuria, usually temporary, occasionally occurs in the course of other diseases. Under this class come the transitory glycosurias following concussion of the brain, cerebral apoplexy, severe neuralgias, and mental disturbances. The glycosuria is usually quite transitory, yet it is in this class of cases that it is extremely difficult to draw the line between glycosuria and true diabetes. Von Noorden believes that in these cases

there is a latent predisposition to diabetes, which only requires to be awakened, at first temporarily by nervous influences. There is considerable evidence in favor of this view, for Frerichs has shown that many of these cases of acute nervous forms of glycosuria pass over into true diabetes. Further, many instances are on record in which individuals have suffered from temporary glycosuria following the influences above mentioned, and then subsequently, sometimes years later, have acquired unmistakable diabetes mellitus. Von Noorden classifies among these clinical forms also those cases of glycosuria which follow the administration of various drugs. It seems doubtful whether all these cases would come under the same category, as the substance present in the urine in many instances is not grape sugar, but glycuronic acid.

Von Noorden believes that in all these forms of glycosuria there is probably an "insufficiency" on the part of the liver to store up glycogen. Owing to the fact that temporary glycosuria occurs in association with various organic diseases, many attempts have been made to test the power or lack of power of the liver to store up glycogen, by administering large amounts of sugar. Grape sugar in doses of from a hundred and fifty to two hundred grammes has usually been given. Larger doses than this must not be administered, because they will produce transitory glycosuria even in healthy individuals. As a result of the application of this test it may be stated that affections of the brain, spinal cord, peripheral nerves or muscles, and functional nerve troubles do not favor the production of alimentary glycosuria. It was found, however, that Basedow's disease did so. It would be expected that diseases of the liver would favor the production of glycosuria. In a certain number of cases of cirrhosis glycosuria was produced, but in the great majority of hepatic disorders this was not the case. This seems rather remarkable, as in most instances the liver cells having the power to store up glycogen are diseased. The prevention of glycosuria in these cases is explained by many to be due to the increased power of the muscles and even the glands to store up glycogen. The most important fact taught by these experiments is that the consumption of carbohydrates in the body is not alone dependent upon the integrity of the liver, because the most serious diseases of this organ often cause no spontaneous and only rarely an insignificant alimentary glycosuria.

Glycosuria in Phlorrhizin Poisoning.—In 1886 von Mering found that the administration of phlorrhizin to human beings and rabbits caused the excretion of large amounts of sugar in the urine. Contrary to what had been observed in puncture of the medulla, here the glycosuria occurs, even though the amount of glycogen in the liver is reduced to a minimum by prolonged fasting of the animal, etc. It must then act in some special peculiar manner. There is now but little doubt that the drug acts primarily on the renal epithelial cells, so changing them as to destroy their normal power of keeping back the sugar in the system, and causing them to seize readily upon the sugar held in solution in the blood. This view is supported by the observation of von Mering and others that the blood is poor in sugar in phlorrhizin poisoning. Minkowski differs with von Mering as to the causation of the glycosuria. He believes that it is brought about not by the action of the phlorrhizin on the renal cells, but actually on the pancreatic gland itself. In cases of phlorrhizin poisoning, as soon as the glycogen of the body is used up the sugar is formed from the albuminates of the body. Von Noorden states that, although there is as yet not the slightest ground for the belief that diabetes is a primary affection of the kidneys, as some authorities have held, yet the results of phlorrhizin administration at least give some support to this view. He suggests that other drugs causing glycosuria may act primarily on the kidneys in a manner similarly to phlorrhizin.

Experimental Pancreatic Diabetes.—Of still greater importance from an experimental standpoint is the work that has been done on the pancreas and the bearing that lesions of this organ have on the ætiology of diabetes. Lancereaux and others had observed clinically that there was an association between diabetes mellitus and diseases of the pancreas. Many experimenters had endeavored to produce glycosuria by extirpation of the pancreas, division of the nerves supplying it, and tying of the pancreatic duct, but with little or no success. The work was begun anew in 1890 by von Mering and Minkowski. They found, in experimenting on dogs, that complete extirpation of the pancreas was followed within twenty-four hours by a severe form of diabetes which led to the death of the animal in a few weeks. The disease thus produced resembles in every respect grave diabetes in man, because, besides the chronic glycosuria, there exist polyphagia, polydipsia, polyuria, emaciation, loss of strength, excretion of large quantities of acetone, diacetic acid, oxybutyric acid, and ammonia, coma, and death. Many others have confirmed the results of von Mering and Minkowski, and the latter attributes all negative results to defective methods of reasearch and to the probability that small portions of the pancreas were left behind owing to the difficulty in successfully performing the operation.

I summarize from von Noorden the chief points established concerning experimental pancreatic diabetes up to date.

1. Diabetes has, up to the present, been artificially produced by extirpation of the pancreas in the following animals: dogs, cats, pigs, carnivorous birds, frogs, and turtles. The following points refer especially to the experiments on dogs:

2. Diabetes occurs in dogs only when the pancreas

has been totally removed, but then regularly. The same results have been secured by running melted paraffin into the pancreatic duct, thus causing complete atrophy of the gland substance.

3. When the pancreas is partially extirpated and the remaining portion with its vessels attached sutured to the abdominal wall, diabetes fails to appear, but if this engrafted portion be removed at a subsequent operation, diabetes ensues. This modification of the experiment shows that the disease is not due to accidental injuries to the sympathetic nerves.

4. When about a tenth part of the pancreas is left in a functionating condition, a mild form of diabetes results. The glycosuria is slight and occurs only after ingestion of carbohydrates. If the remaining portion of the gland becomes subsequently obliterated, then diabetes in severe form ensues. When more than one tenth of the gland is left behind, with power to perform its functions, no diabetes usually follows.

5. The relation which exists between the pancreas and excretion of sugar from the organism does not depend upon the action of the pancreatic juice, for diabetes does not occur in cases of simple shutting off of the latter from the intestine, nor when the secretion escapes through a cutaneous fistula.

6. The influence of the pancreas upon the excretion of sugar appears to be, at least in dogs, a specific one—that is, no organ other than the pancreas possesses it.

There is, then, abundant evidence to show that the pancreas has a marked influence on the metabolism of carbohydrates. Experimenters have formulated the following hypotheses:

Either some substance which has an injurious influence upon the conversion of sugar collects in the organism after extirpation of the pancreas, or else, after this operation, there is some substance wanting or some function is abolished which, under normal conditions, serves to facilitate the metabolism of carbohydrates.

An important point has been established—namely, that the deposit of glycogen in the liver and muscles does not normally take place after extirpation of the pancreas. The animals may be given large quantities of starchy materials without more than mere traces of glycogen being found in these organs. Lepine, of Lyons, professes to have discovered that the pancreas produces a ferment which enters the circulation and causes a breaking up of the grape-sugar molecule within the blood. He terms this substance a "glycolytic ferment." After the pancreas is extirpated this ferment is not present, and, accordingly, an accumulation of sugar occurs in the blood from which glycosuria results. Up to the present, Lepine's results have not been extensively confirmed by other observers.

Theories regarding the Production of Diabetes Mellitus.—A number of theories are held, supported by different observers, regarding the production of diabetes. It is apparent that there may be a disturbance of the normal equilibrium in various ways:

1. By overproduction of sugar.
2. By a diminished consumption of sugar by the tissues.
3. By a combination of the two above-mentioned processes acting together.
4. By paralysis of the renal epithelium.

The balance of evidence seems to be in favor of the first view, that there is an overproduction of sugar in diabetes mellitus, in consequence either of direct nerve stimulus to the hepatic cells, or the removal of some influence which normally controls their function—for example, the pancreatic juice. Pavy regards the excessive activity or morbid function of the liver to be due to a vasomotor paralysis.

Seegen and Ebstein are supporters of the view that diabetes depends upon the non-destruction or diminished consumption of sugar by the tissues, and are also supported by von Noorden in their views.

It is possible, as von Noorden suggests, that overproduction and underconsumption of sugar may alternate in the same individual.

The evidence in favor of the theory of the renal origin of diabetes is as yet not convincing.

Original Communications.

HEREDITARY NEUROTIC CONDITION AND ACQUIRED INSTABILITY AND DISEASE ASSOCIATED WITH CRIME.

WITH THE REPORT OF A CASE.

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The following case is selected for detailed report because of its interest from the medico-legal and anthropological view points.

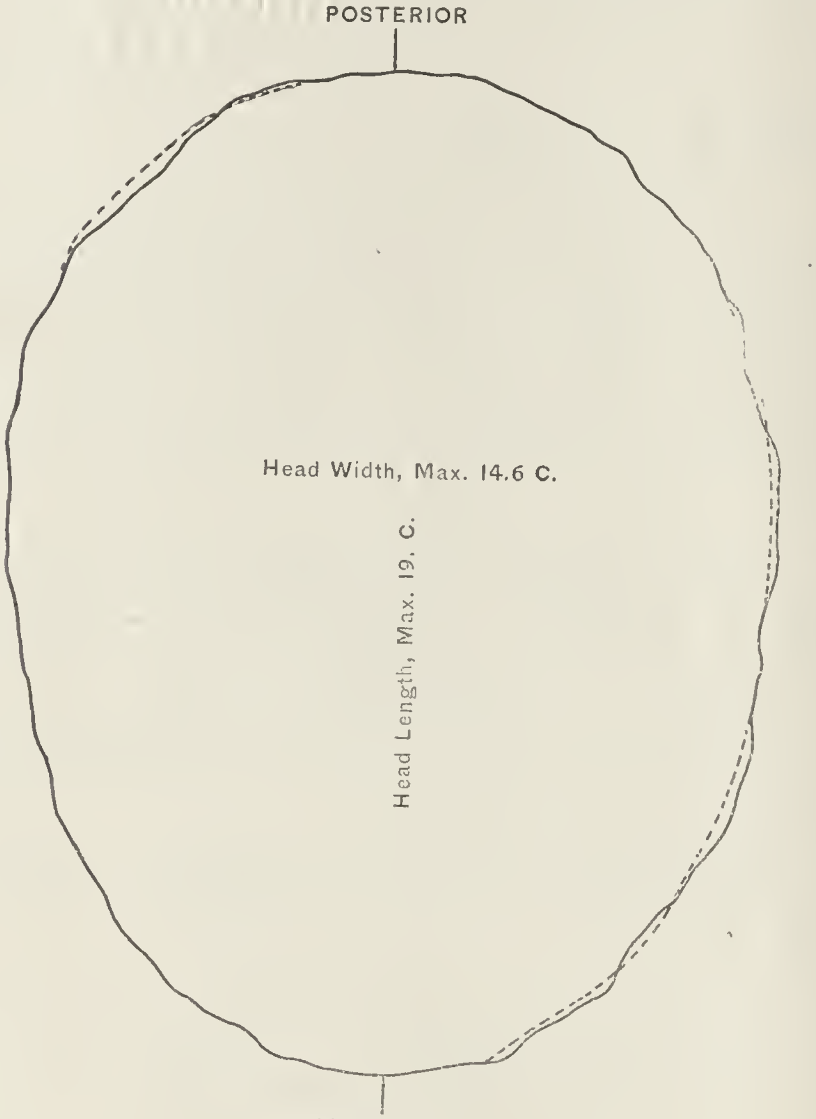
G. W., aged thirty-nine years; nativity, United States; occupation, painter. Presented himself for treatment November, 1895.

Family History.—Father and paternal grandfather alcoholic (father died in an inebriate asylum). Maternal grandmother, insane.

Personal History.—Only child of parents; had several infantile convulsions, last one at five years of age (these were ascribed to indigestion); alcoholic since sixteen years of age; syphilitic (?) (had chancre in 1882, but no consequences). In 1891 took one of the "gold cures" for alcoholism without curative results.

General condition: Appearance anæmic; muscular system poorly developed; tongue coated; bowels constipated; appetite poor. Education meagre (reading, writing, and the elements of arithmetic). Intelligence fair. Memory poor. Temperament moody and at times irascible. Reflexes normal.

The patient reports that four years ago he began to suffer with severe headache, which was followed, after a few days, by a numbness and loss of power, beginning in the fingers of the left hand and gradually involving the whole left side. This condition persisted for about three days, when a severe convulsion occurred, after which the left side became normal. Since that time he has had more or less severe convulsions, described as general, at intervals varying from a few hours (six to eight) to two weeks. Each attack is preceded by the following aura: The patient sees a small, bright spark in the distance, which gradually grows nearer, increasing in size as it advances, until it finally strikes him in the forehead; he hears a sharp report and the convulsion follows. The duration of this aura is from twenty minutes to two hours, so that he has never fallen, having ample time to reach a place of safety before the fit supervenes.



Contour circumference of G. W. Anterior = frontal; posterior = occiput; continuous line = contour of head; dotted line = as it should be if symmetrical.

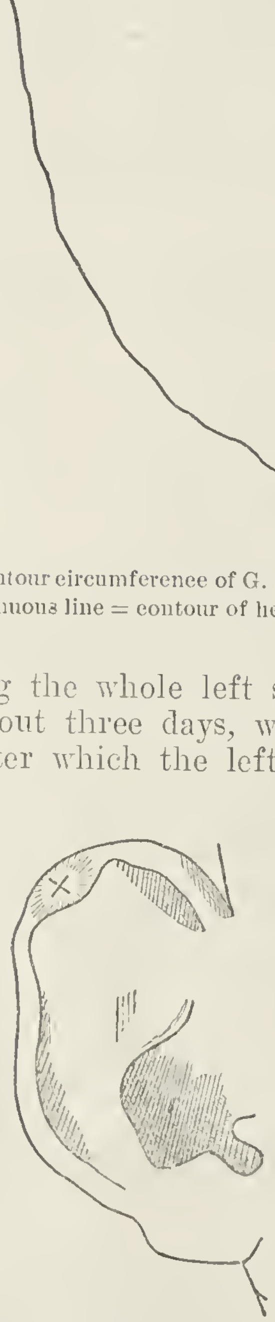


Diagram of right ear of G. W. × = Darwinian tubercle. None of the anatomical portions of the ear were well marked. Those parts known as the fossa of the helix, the fossa of the anthelix, and the anthelix, formed a flat plane.

In January, 1896, the patient had an attack in my presence. The convulsion began in the left hand, then the left leg was involved, and in a few seconds the convulsion became general and lasted for seven minutes. Consciousness was completely lost, he frothed at the mouth, and the urine was voided involuntarily.

The post-convulsive stupor and sleep lasted for upward of an hour and were followed by a period of great excitement, lasting about ten minutes. While the patient did not endeavor to harm himself or others during this period of excitement, he walked quickly backward and forward, his features were distorted as though in pain, and a white line of the sclerotic was visible below the upper lids, adding to his truly dreadful appearance. After this excitement had passed off he again became his normal self, and had no recollections of his attack, except that there had been a period of excitement.

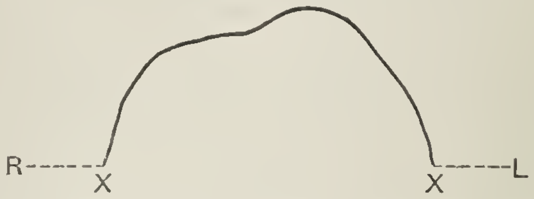


Diagram (approximate) of the arch of the hard palate, case of G. W. R = right; L = left.

Under the bromides and iodides he gradually improved, in so far that his convulsions became less frequent, but the mental condition became more clouded, though at no time was his mental condition such as to interfere with his work.

These conditions prevailed for some months, when he disappeared.

In October, 1896, I happened upon him at the Kings County Penitentiary, he being in the hospital of that institution under the care of the resident physician, Dr. Stumph, to whom I am indebted for the following history, and who also aided me in taking the following measurements:

W. was sentenced on a petit-larceny charge.

The following is taken *in toto* from Dr. Stumph's records:

"*Diagnosis.*—Cerebral syphilis; cerebellar tumor.

"Father died from effects of prolonged use of alcohol.

"Four years ago patient had a similar attack to present.

"Post-polar cataract over both eyes. Heart sounds normal; pulse, 60; quality, full; condition of blood, normal; tongue clear. Liver slightly diminished in size. Appetite poor. Digestion good. Bowels constipated. Sleeps poorly. Height, five feet eight inches. Weight, a hundred and thirty-six pounds. Symmetry normal.

"For last month patient has been suffering from continuous headache, worse early in the morning. Shortly after beginning of headache whole left side felt numb—numbness beginning in hand and arm and extending to shoulder, until, at present, patient has decidedly diminished power on left side and locomotion is impaired. When patient tries to walk he inclines toward the left. If he attempts to pick up anything with left hand he has to grope for it a moment before he can touch it. Sensation not affected. Reflexes normal (left patellar exaggerated (?)). Memory slightly impaired. Treatment, potassium iodide. Result, recovery."

The following measurements were taken with the most approved instruments of the French school, and after the manner of Broca:

Height, 1.574 metre; weight, a hundred and thirty-six pounds.

MEASUREMENTS OF HEAD.

Circumference, maximum	54.3 ctm.
Length of head, maximum	19 ctm.
Breadth of head, maximum	14.6 ctm.
Shape of head, mesocephalic; index	77°—.
Eyes, separation of external canthi	8.2 ctm.
Eyes, separation of internal canthi	2.7 ctm.
Length of nose	5.25 ctm.
Breadth of nose	3.1 ctm.
Shape of nose, leptorrhinious; index	59°+.
Face, length	16.9 ctm.
Face, forehead	5.7 ctm.
Ear, length of right	5.6 ctm.
Ear, breadth of right	3.2 ctm.
Ear, length, of left	5.4 ctm.
Ear, breadth of left	3.3 ctm.

Special anthropological signs: Hard palate, high and irregular (see diagram); tongue clean, slight deviation toward right (present at two or three examinations); teeth much worn, regular but small; pulse, 60, normal; hearing slightly impaired on left side; ears somewhat irregular, especially left, prominent; Darwinian tubercle noted (see diagram); eyes, brown (post-polar cataract over both); sight, poor; hair, dark chestnut; hair on face, scalp, and body scanty.

Sensibility: Tactile sense about normal, some exaggeration of sense of pain in localized areas, particularly on back and left side of body; secretions and excretions normal, except urine, which is passed in large quantities, of light color and low specific gravity; internal organs normal, with exception of liver, which is slightly decreased in size; sleep light, with occasional bad dreams.

Psychical examination: Disposition, gloomy; will sit alone, evidently brooding. When spoken to, will respond pleasantly, but lapses again into the moody state; mental ability, small. Egoism exaggerated. Memory, fair only, but considerably improved during the year past; moral sense deficient in a small degree; no illusions or other perversions.

From the anthropological standpoint we have a man with a direct bad heredity. His paternal grandfather, an Irishman, was an extremely hard drinker and finally died of his excesses. The father, born in this country, was reared in extreme poverty, the result of *his* father's dissipations, acquired a very limited education (it is doubtful if he could either read or write, W. being not at all clear on that point), was put to work at an early age, and began drinking excessively at probably the same time, which indulgence continued until the time of his death. Rather late in life (thirty-five or thereabouts) he married a woman (the daughter of a mother then in an insane asylum) who was not strong, being subject to severe and prostrating headaches, and W. was the only child of this union.

It would certainly be strange to expect a normal being as the offspring of such parents. What we find is a man of the distinctly neuropathic type, the fruit of a neurotic tree. He exhibits a low order of development, physical, mental, and moral. While the principal parts of his anatomy are far more symmetrical than those of many others whom I have examined, there is some deviation from the normal, noted particularly in the hard palate, and, to a somewhate lesser degree, in the cranium. Aside from this, W. exhibits many signs of degeneration: a low mental state, extreme egoism, a lack of will power, and something approaching childishness being prominent. His development, especially the muscular, is below normal. His general condition is similar to that found among that neurasthenic class whose condition is superinduced by masturbation, though W. denies indulgence in this vice, admitting, however, excessive sexual intercourse. That his own excesses have contributed to these features there can be no doubt, but they, without his hereditary taint, could not *produce* such a condition.

Though W.'s condition had induced a lowered condition of will power and undoubtedly diminished his moral sense, he never lost the power of distinguishing between right and wrong. His psychic attacks he recalls as "periods of great excitement, when he could not sit still," and claims to have a perfect knowledge of what transpires about him during these periods, though he "took no interest in them."

It is my desire to direct the interest in this case into the channels of legal responsibility. In the present somewhat chaotic state of medico-legal procedure in cases of this type each contribution, though describing but a single case, can not fail to be of advantage. There can be no doubt but that the present and past methods of conducting murder cases where a plea of irresponsibility has been entered by the defense are not only unscientific but hold up to public ridicule legal medicine, its advocates, and all pertaining thereto. That this condition is not in any way due to a lack of intelligence or to insufficient understanding or learning on the part of the expert witnesses employed is evident, for, under different conditions, some of these same men would, with scientific precision, reach just and proper conclusions.

The fault, then, lies in the method of conducting such cases.

Let us, for the sake of argument, suppose that this man described above had been guilty of a crime of grave import *—a murder—instead of the petit larceny for which he was imprisoned.

There is no doubt of murder having been done nor of W. being the murderer. A motive is clearly shown, but at the trial the defense puts in its plea of mental irresponsibility, which plea is based upon the family history and W.'s past history of epileptic attacks and post-convulsive seizures of psychical disturbances.

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* Authorities agree to a difference between grave and petty offenders among epileptics, but for our hypothetical purpose the present case suffices.

It is easy for the defense to show that the accused has been subject to epileptic seizures and I, if called upon, could testify to the period of intense excitement described above, following the convulsion by almost an hour. There is no doubt but that W. might in one of these psychic attacks commit murder.

[There is very grave doubt, however, if he could be impelled to such a deed *simply by the disturbed condition of his mind.* It is far more reasonable to suppose that some fixed idea or intention, perhaps of revenge, had possessed his mind during a shorter or longer period when in his normal condition, and that the temporary psychic disturbance removed those deterring influences normally present.]

The character of epileptic seizures varies so much in the same individual at different times that, with our present knowledge of this chain of symptoms, it is impossible to say whether W. could or could not have had an attack of "psychic epilepsy" without a previous convulsion.

If the defense could then show that just prior to or immediately following the perpetration of this violent act there was anything strange or wild in W.'s appearance or actions it would have established a strong argument in favor of the accused.

This is practically the defense in the recent Barbella case.

Let us suppose a hypothetical question here similar in purport to that introduced into that now notorious case. This query is propounded to a number of experts with very certain results as far as their answers are concerned. But the result arrived at is not a scientific decision, but rather an unavoidable answer from the very nature of the question, and when all is finished nothing has been proved and the minds of the jurors have been drawn from the principal object of the trial, filled with that which they, as rational beings, can not fail to recognize as ridiculous, though at the same time disturbing, matter. The verdict of this body must be rendered, to some extent, in accordance with all this opposing testimony on that very subject where scientific knowledge should supersede opposition of ideas.

Instead of all this, if W. were placed under the observation, in a suitable place, of a man or, preferably, of a body of men of recognized ability, and a careful study of his case in all its detail made and rendered to the court at the time of trial, the verdict of the jury could be based upon its purport, and a thoroughly scientific basis for the conduction of such trials would be reached.*

While it is not the intention of this article to discuss in any way "psychical epilepsy," the present state of this subject so jeopardizes our welfare that I am impelled to add my voice to those of others who have clearly stated the uncertain condition of our knowledge of this disorder, and urge that a conservative view of the field be maintained until a scientific basis for the formulation of opinions is established.

"Psychic epilepsy" is a dangerous waif to be at large and liable to adoption by any criminal who may temporarily stand in need of its services.

346 McDonough Street.

THIOSINAMINE:

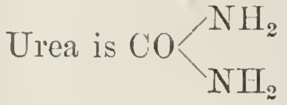
A FURTHER STUDY OF ITS USE IN THE TREATMENT OF KELOID, "INOPERABLE TUMORS," AND CICATRICIAL CONDITIONS, INCLUDING DEAFNESS.

By SINCLAIR TOUSEY, A. M., M. D.,
ASSISTANT SURGEON, ROOSEVELT HOSPITAL, OUT-PATIENT DEPARTMENT; SURGEON IN CHIEF, ST. BARTHOLOMEW'S CLINIC.

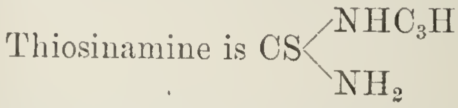
In an article published in the *New York Medical Journal,* May 2, 1896, I stated that I had begun my study and use of this drug in 1894, and that, so far as published, mine were the first cases of keloid treated with it. I stated then that while the number of cases was small the results had been positive.

I write further upon the subject in order to answer a number of inquiries, and also to record the ultimate results in the cases already described. In addition thereto, a number of later cases in my own practice and that of others will be reported.

The drug itself is derived from oil of mustard seed and belongs to the same chemical group as urea:



$$\text{Urea is } CO\begin{array}{l} \diagup NH_2 \\ \diagdown NH_2 \end{array}$$



$$\text{Thiosinamine is } CS\begin{array}{l} \diagup NHC_3H_5 \\ \diagdown NH_2 \end{array}$$

It is crystalline and does not keep well in an aqueous solution. It is amply described in all modern works on chemistry and in Merck's price list of drugs.

Thiosinamine first appears in medical literature as one of the things experimented with in the hope of finding a cure for tuberculosis. In this it proved an addition to the long list of failures. It was studied by Hebra, Keitel, Van Hoorn, Richter, and Zedziak as to its influence upon tuberculous processes, its bacteriology, and its physiological action, notably upon the blood. They also tested its therapeutic action in several of the conditions mentioned below.

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* Since this article was written, Van Gieson and Sidis have published (*State Hospitals Bulletin,* vol. ii, No. 2) an article, Epilepsy and Expert Testimony, in which a plan is formulated to which I heartily subscribe: "It would cost considerable money for the maintenance of a legally appointed commission or some official body to examine criminal cases from the scientific standpoint of psychiatric, pathological, toxicological, and anthropological investigations of crime, but the expenditure of such money would be, in the long run, a great saving and benefit to the State. It is a question if the maintenance of such a commission, to act with the court in an advisory capacity and to take charge of scientific investigation in criminal cases, would cost much more than the considerable sums spent under the present irregular methods of conducting expert inquiry. In any criminal case where questions of a scientific nature arise, the determination of those questions shall fall within the province of the commission, which shall work out the scientific data and *render its general conclusions thereon,* so that the court and jury shall have a solid basis to determine their verdict in connection with the ordinary testimony."

These investigations showed it to have no curative influence upon tuberculous processes; not to be even a feeble germicide, but to have two properties from which I made the deduction that in this drug we possessed the long-sought means of cure for keloid. One of the observations which led to this discovery of mine, if I may call it so, was that its use was followed by the softening and relaxation of the deforming cicatrices left by lupus and the consequent cure of extreme cases of ectropion and the like. Another was that its hypodermic administration produced an immediate disintegration and elimination of white blood-cells, so that the number present in the blood fell to one third the normal. This was followed by a leucocytosis, or increase beyond the normal, persisting for forty-eight hours.

The answer to the question, How do I explain its effect upon keloid? lies right here; this tremendous cellular activity in the circulating medium calls forth a coordinate activity in the leucocytes and fixed connective-tissue cells throughout the organism and an increased removal of effete or lowly organized material by way of the blood and lymph channels. This view is strengthened by the recorded observations of diuretic action when beginning its use. Accurate observations made upon ward patients in German hospitals showed it to be an active diuretic and to hasten the absorption of fluid effusions. The first of these effects has also been observed by a correspondent of mine in Philadelphia. It should be stated here that where I have quoted from private communications I have withheld names and details, so as to enable each gentleman to report his own results when he shall have formed his final opinion of this method of treatment.

I have been asked many times where thiosinamine *can be obtained*, its *cost*, and its *dose*. In New York it is supplied by the following wholesale houses: Merck & Co. and Lehn & Fink. It costs seventy-five cents or a dollar an ounce. For nearly a year past I have been using and now recommend a hypodermic solution made by dissolving ten parts of thiosinamine in one hundred parts of a sterilized mixture of water and glycerin. This solution keeps well and is non-irritant. I inject twelve or fifteen minims, as a full dose, into the muscles, triceps or glutæi, every three days. Others have used three grains of thiosinamine as a usual dose, and in a great many cases this is well borne. I think the dose should be gradually determined for each individual case. In my experience doses much larger than fifteen minims of the solution caused a slight feeling of nausea after each injection.

I am in a position now, after a wider experience with it, to state most positively that the use of this drug is free from deleterious effects of any kind. I realize that before it can be established as a successful treatment for keloid and the like, equally favorable therapeutic effects must be obtained by many other observers. These corroborative observations are being reported to me constantly.

Too large or too frequent doses might cause slight nausea, and too long continued use without intermission might produce headache and malaise; but neither of these has occurred in my own cases. Carefully conducted, the treatment produces a general tonic effect, and my cases of keloid have not lost a day from work or business during the treatment.

My advice has been asked about its use in the treatment of *corneal opacities*. I should inject twelve minims of the solution into the triceps every three days and continue with the same dose until at least twenty-seven injections had been given. Marked improvement in vision may be promised, but the improvement in appearance is not so striking. In every case, therefore, this treatment should be used for definite and serious impairment of vision, and the acuteness of vision should be carefully measured and recorded before and after treatment. An observation of my own, recorded in this paper, will show my reason for believing that any benefit obtained in the absorption of cicatricial tissue or the like by this drug is a permanent one. As mentioned in my first article, a number of cases of corneal opacity have been successfully treated by Hebra and by Richter. In a case reported by the former the patient before treatment could hardly avoid collisions with people on the street, and afterward could read the time by the high city hall clock (Rathhaus Thurm) in Vienna. Hebra states that a large number of cases of mild impairment of vision from corneal opacity have been entirely cured by treatment with thiosinamine at the Rudolfspital in Vienna.

A recent case communicated to me by an oculist of Philadelphia showed very marked improvement in vision and corroborated earlier observations as to diuresis and as to increase in appetite and weight during treatment. There occurred after one injection slight temporary anæsthesia of a portion of the forearm.

The possibility of the last-mentioned occurrence was mentioned in my first article, and was there attributed to a mechanical injury to a cutaneous branch of the musculo-spiral nerve. Similar cases are on record where ether or antipyrine has been given by the hypodermic method.

In this connection should be recorded an unfortunate case in the hands of one of my correspondents:

The patient suffered from deforming syphilitic cicatrices of the neck and face. The doctor injected thiosinamine into the triceps, using the strictest antiseptic precautions. Shortly afterward the arm became swollen and painful, and death ultimately ensued from septicæmia.

Such a case brings forcibly to mind the necessity for eternal vigilance in the employment of the hypodermic method of medication, but is so rare as not to lead any one to abandon its use where it seems to be the best means of introducing a drug into the system.

In a recent case of my own, to be described below, I administered thiosinamine by the mouth. Three grains were given in capsule every day for eight weeks without any disturbance of any sort, and with the therapeutic effect sought for. This is the only case in which I have given it by the mouth, but I see no reason why this, the simplest, may not prove to be the best method of administering the drug.

Two of my correspondents have used an aqueous solution hypodermically, and report less pain and equally successful results.

Reverting to our text: the use of thiosinamine for corneal opacity should be limited to cases in which there is no danger of fanning a latent inflammatory process into an active one. In the case of the eye, such an effect would necessarily be detrimental; but elsewhere it is sometimes of benefit. I must cite here a case mentioned in the first article: the use of this drug in an old latent case of osteomyelitis of the tibia started up suppuration, resulting in the extrusion of an old sequestrum and definitive healing.

One of my correspondents reports the cure or clearing up of a *cataract* under thiosinamine treatment. It certainly was innocuous; and if this observation should be verified by other physicians in other cases of cataract, it will indeed be a most wonderful thing.

For keloid, cicatricial contractures, and hypertrophied scars further experience in its use has proved its utility.

The patient in my first published case of keloid remains now, three years after treatment, entirely free from recurrence; and shows only a broad, flat, flexible cicatrix.

A later case of mine was that of a hospital surgeon whose hand was wounded by the rough edge of a rib during a resection for empyema. Violent cellulitis of the hand and wrist set in, and a number of incisions were made. It was seven weeks later, in the partially healed cicatrices, that a keloidal character developed. The scars, when treatment was begun, May 25, 1896, were nearly half an inch in elevation. Thiosinamine was injected hypodermically at a distance from the trouble. Five weeks later it was noted that rapid and complete healing was taking place, and when I last saw the hand, July 14, 1896, the thickening and induration had completely disappeared from all the cicatrices except one; and in that one they were present in a very slight degree.

Even if we assume that this was merely a case of hypertrophy of a cicatrix, and not about to develop into true keloid, the favorable effect of the treatment was evident to all who watched its progress.

In the *New York Medical Journal*, March 20, 1897, Dr. R. C. Newton reported the successful use of thiosinamine in two cases—one of multiple and partly spontaneous keloid, the other of cicatricial contracture of the axilla. He kindly invited the present author to take part in the discussion at the meeting of the City Hospital Association at which his paper was read. My remarks on that occasion are to be found in another part of the same number of the *New York Medical Journal.*

All my correspondents report difficulty in getting patients to persist in a treatment the effect of which is so gradual; and I have encountered the same obstacle to a satisfactory and final decision as to the value of this drug. I have used it for a few times in many cases of keloid and have always seen marked improvement; but in only two or three has the ultimate effect been under observation.

I am told that this is now the routine treatment for keloid in the skin clinics in Vienna and also in the principal ones in New York; and I suppose we shall soon read reports based upon a large enough number of cases to prove its success or failure.

Unpublished cases show its marked utility in restoring the function in limbs the seat of cicatricial contracture from burns and the like. One of Dr. Newton's published cases was also of this character.

For such *malignant growths* as seem to offer no hope of benefit from operation its palliative influence is a reality.

A case in which it was used on my recommendation was one of carcinoma of the bladder. An exploratory suprapubic cystotomy with perineal drainage had shown the impracticability of radical cure, and had done all that surgery could do for the patient. For a number of weeks after the operation there was excruciating pain, and the urine was thick with pus and blood. Thiosinamine was given hypodermically and the urine at once cleared up and the pain diminished. Treatment was continued for a long time, and certainly seemed to palliate the symptoms, though it did not prevent the fatal termination of the disease.

In another case the patient, G. L., a man of fifty-five, had been operated upon by me at St. Bartholomew's Clinic for epithelioma of the lip. A wedge-shaped excision was done, and a recurrence at another part of the lip was removed later. These operations were performed in the year 1894, and within a month of each other. There was at no time any further trouble in the lip, and the portions removed presented the ordinary gross appearance of epithelioma. A microscopical examination was not made, however. About a year later a glandular swelling on the left side of the neck was excised by Dr. G. W. Crary at the New York Cancer Hospital, and on microscopical examination was found to be sarcoma. The removal was deep and extensive, but complete healing had not taken place before a recurrence was noted. A second operation at the Cancer Hospital removed as much tissue as was safe, the external jugular vein being divided to allow free access. On my return from a European trip in the autumn of 1895 the patient again fell under my care at

St. Bartholomew's, and the use of thiosinamine as a palliative was adopted. Injections were made into the triceps muscle every three days, and for the first three months there even seemed to be some improvement. The local treatment consisted in almost daily dressings, syringing with peroxide of hydrogen, and packing with balsam-of-Peru gauze. Under this treatment the disease remained local, and the patient continued to be strong enough to come to the clinic for a year from the time it was adopted. Then, one day, the end came in the way we had feared; while he was sitting in his chair at home, a sudden hæmorrhage, probably from the carotid artery, proved fatal in a few minutes.

Watching this case from start to finish, it seemed to me that much real good had been done by the treatment. I want to call especial attention to the development of sarcoma in this case, subsequent to the removal of a tumor almost certainly of an epithelial type.

Letters from other physicians describe its use in cases of "inoperable" tumors as having kept the disease at a standstill and increased the weight and strength of the patient for six months; but I shall leave to them the publication of their cases.

In the treatment of *urethral stricture* thiosinamine was used with varying degrees of success in Europe, but has been used here since my first paper with apparently perfect success. Intramuscular injections into the thigh, with the occasional passage of a sound, have resulted in the cure of strictures of a type usually amenable only to cutting operations. The dense cicatricial tissue has softened and yielded. According to a German surgeon, an "impassable" stricture will readily admit a filiform bougie after a few days' treatment with thiosinamine.* This seems to me an observation of very great importance. It may enable us, by preparatory treatment, to convert a difficult and dangerous operation into a simple one.

Finally, I want to urge the trial of thiosinamine in the treatment of *deafness*—that form in which the tympanic contents are incapacitated for vibratory transmission by bands and masses of fibrous tissue. This is perhaps the most common form and should, by analogy, be amenable to treatment by this drug, combined with the use of certain mechanical measures, such as inflation of the middle ear. The administration of thiosinamine, not locally but systemically, by the hypodermic method or taken by the mouth, acts here as elsewhere to produce the softening and absorption of cicatricial tissue. Those of my colleagues whose hospital and private practice brings under their care these hitherto hopeless cases will be able to test this treatment practically. This use of thiosinamine, published now for the first time, is the suggestion of an eminent aurist. He perhaps would prefer not to be quoted as advocating something so new and untried, but it will give the author sincere pleasure to assure to his friend the credit if this treatment should prove a help to the hundreds of these unfortunates.

I myself have used thiosinamine in the case of a man of thirty-two, suffering from deafness due to sclerosis of the middle ear, without pharyngitis or rhinitis. Uncles and first cousins on both sides had become entirely deaf. The diagnosis had been confirmed by Professor Politzer, of Vienna, and by aurists in this city. With the right ear the tick of an ordinary watch could not be heard through the air; and this had been the case for five years. With the left ear, the same watch could be heard at a distance of fifteen inches. The watch which was used could be heard by most persons at a distance of twenty, and by some at twenty-five, inches. It was just beginning to be difficult to catch every word in general conversation. Noises were beginning to be noticed in the ears. There was a positive obstruction to the passage of a Eustachian catheter on the right side, but none on the left. There was a marked absence of cerumen. Both membrana tympani were drawn inward, but the middle ear on either side could be inflated (though not readily) by either Politzer's or Valsalva's method. A tuning-fork held against the teeth or forehead in the median line was heard much more distinctly in the right ear. The previous treatment had been by occasional inflation of the middle ear, and the instillation of a weak solution of chloride of zinc or of tannin and glycerin into the nasal fossæ. Impairment of hearing had steadily increased. I began to treat this case with thiosinamine on April 13, 1897, giving three grains by the mouth, in capsule, every day. This was perfectly well borne; but as a precaution, treatment was suspended during fourteen days at the end of the second month, and has since been resumed. The occasional inflation (Valsalva's) was continued. Now, at the end of four months, the patient reports considerable improvement, and when tested with the same watch is able to hear it tick at a distance of two inches from the right ear. Before treatment it could not be heard at all through the air with this ear. Tested in this way the left ear has not changed perceptibly. Noises in the ears have ceased. The treatment is still to be continued.

Observations as to the exact distance at which the ticking of a watch can be heard are so liable to be misleading that I publish this preliminary report as encouraging only. Hearing has certainly not yet become normal. I give it merely as a case showing that the drug can be safely given for the long period required, and with no disagreeable effects.

It would appear from what has been said that thiosinamine sought out the disease, in whatever part existing, and destroyed it. This sounds rather extravagant, but mercury and arsenic and iodide of potassium and a good many other drugs might be said to have the same power. The idea is that this drug sets up an unusual cellular activity in the blood and in the lymphatic and connective tissues which are the nurseries of leucocytes; and that lowly vitalized tissue (*e. g.*, cicatricial tissue) is affected wherever it may be located.

The bibliography of thiosinamine is complete as given at the conclusion of my first article, with the addition of my article in the *New York Medical Journal*, May 2, 1896; Dr. R. C. Newton's, in the *New York Medical Journal*, March 20, 1897; and my remarks on page 397 of the same number of the *Journal*.

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* This occurred also in the case of a patient operated on by the author on September 17, 1897.

151 West Seventy-sixth Street.

SEASICKNESS:
ITS PATHOLOGY AND TREATMENT.

By ERNEST W. KELSEY, A. M., M. D.,
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AUGUST, 1897.

Notwithstanding that various monographs have been written in a somewhat desultory manner upon the subject of seasickness, as we enter further and deeper into the study of this malady and the different complications often found in conjunction, we must notice an apparent lack of anything like an accurate knowledge of its pathology or treatment.

I will attempt to enter, in the following pages, into some discussion upon the subject, doing so, however, with misgiving, as my views may be of little value against the weight of evidence of learned authorities. In justification of this paper it is but right to mention that the writer has had considerable experience professionally, in the capacity of steamship surgeon, among multitudes of sufferers, and has seen seasickness presented in all its different phases, its several grades of severity, at all seasons of the year, either acting alone or complicated with other diseases. The fact still remains that more attention should be paid to a regular scientific study of the subject than has heretofore been done. If a genuine prophylactic could be produced a few weeks before transatlantic traffic commenced, thousands would hail it with delight, and the discoverer would in the minds of many people undoubtedly rank with the leaders of modern medicine. As an acknowledged fact, it is to be regretted that although medical libraries are filled and medical magazines produced showing, by a study of their contents, a wonderful degree of progress in the last half century, the treatment of seasickness seems to have been mainly left to charlatan nostrums. As a rule, the regular practitioner has been satisfied with a short article written or a prescription proposed as the result of a too short sea trip, and then troubles himself no further.

What is seasickness? What do we know about its pathology, prevention, or treatment? Numerous theories have been proposed in explanation and numberless remedies suggested without benefit—so much so that it has become a common jest with seamen that the only cure is to remain on shore. Of an uncertain origin, we can only presume as to whether the ancients suffered much, accounts showing it to be mainly a disease of civilization. It is a well-known fact that barbarians suffer but little. Several of the earlier writers in our literature mention its occurrence—Shakespeare, Rabelais, Swift, and others. The first-named tells us as follows in *A Winter's Tale*, Act V, scene ii, viz: "She began to be much seasick, . . . extremity of weather continuing." This shows even then the profound respect and terror seasickness inspired in its occurrence. With the great amount of tossing about in the cockleshell boats of those days, the agony to a sensitive subject must have been intense.

In a study of the various theories regarding its pathology, the favorite one seems to regard seasickness as a functional disturbance of the nervous system and circulation produced as shock, due to the ship's motion. The changes in the circulation are mainly mechanical in type. Dr. A. D. Rockwell, of New York, in a recent article, January 25, 1896, in the New York *Medical Record*, has advanced the theory that seasickness is the result of a series of minute but continuous shocks to certain portions of the brain substance, and these reacting produce the subjective phenomena. Many of the observers in the medical profession base their theories on too short experience with the disease, perhaps a voyage or two taken generally in the best season; but steamship surgeons of ability and long service, in contact with the disease at all times, appear to unite in not placing too much stress upon the brain-disturbance theory, regarding the circulation as more at fault, not denying the existence of the first but emphasizing the second theory. All unite, however, in agreeing that a lowered arterial tension is produced through the action of the vasomotors, causing what we see in the patient brought to us. He or she complains of a feeling of complete depression, giddiness, frontal headache, vomiting, and very often deranged bowels and urinary secretions. A feeling of drowsiness is usually noticed as the first symptom, probably due to anæmia of the brain. Very often a sensation of chilliness is noted as an early sign. The appearance of the patient is characteristic of the vasomotor disturbance—marked pallor, cold extremities, and frequently transpiration, with the subjective chilliness noted above. Thermometrically proved, there is a diminished temperature at the onset. The circulation shows a frequency of pulse with diminished resistance, a phenomenon compensatory for the loss of arterial tension. Later on a slight trace of fever is often noticed and sometimes increased peristalsis. The vomiting is mainly mechanical in type, due to the churning the stomach receives from the ship's motion, and may be aggravated by the condition of the patient's system before sailing. There is, I believe, some action on the vomiting centres in the brain. The intense feeling of prostration in a susceptible patient is often out of all proportion to the physical signs observed. Before considering susceptibility, two other peculiarities must also be noticed as features of this disease—namely, sight and smell. The sense of sight seems to bear relationship with seasickness. If a person who has a tendency to be seasick gazes at the open ocean and attempts to closely follow with his line of vision the moving panorama, it will often be found necessary to succumb, and a contribution to Neptune may be unavoidable. When, however, the eyes are closed some relief seems to occur. The visual centres may thus be acting with and augmenting other disturbances. The sense of smell is acutely predominant here, the condition of the person attacked being often made worse by an inability to withstand ship odors, as cooking, bilge water, cargo smells, etc. Also it should be mentioned here that the severity of an attack of seasickness very often depends in a measure upon the amount of muscular resistance offered to the movements of the vessel. An inability to accommodate one's self to these movements early in the voyage will often cause the suffering of the patient to be intensified. This inability may be due to various causes obvious to the reader, as age, sex, condition of muscles, nerves, etc. Conversely, the patient's health often rapidly improves if this simple fact is closely observed.

Regarding susceptibility, patients differ. Some are severely prostrated, others not at all. As a general rule, brunettes suffer more than blondes. A certain percentage never become completely accustomed to the motion of the vessel. Captain ——, a gentleman with whom I am personally acquainted, is unfailingly slightly sick for a short time after leaving port, his discomfort being somewhat aggravated if bad weather sets in early. He has followed the sea continuously for over thirty years. A few persons escape altogether, regardless of the weather conditions. It has been remarked that travelers subject to the drinking habit are little prone to be seasick. This is explained by the fact that their system has become accustomed to the changes caused by the ingestion of alcohol, and that these changes are in a measure analogous with those occurring as a result of seasickness in abstainers. Their system being thus in a certain sense prepared, "Old Ocean" fails to move them. The cases of pregnant women are particularly treacherous to handle at sea. In fact, it has become a standing rule with many steamship companies to refuse, as far as is possible, such travelers on the grounds that if severe seasickness should arise, miscarriage, abortion, or premature labor may be the result.

Seasickness is not in any sense a dangerous disease, unless aggravating coexisting lesions, and very few deaths have been traced to it as a cause, although at times it presents an alarming picture, the symptoms being so severe as even seeming to threaten life. Indeed, many observers consider that results from a mild attack of seasickness are beneficial in many instances. This theory, however, I believe to be wrong. Nevertheless, thousands would gladly be relieved when down, or its occurrence prevented, as the fear of succumbing prevents many from enjoying the benefits of an ocean voyage. It behooves medical men, therefore, to discover, if possible, some remedy that will act as a preventive measure or give relief in the event of its occurrence.

As to the methods of treatment, hundreds of the so-called preventives and cures have been proposed, tried, and failed; nearly all falling far short of the success claimed for them. Few can be depended upon to give relief in all cases, but I think we have certain drugs and methods at our command which, if resorted to at the proper time and correctly administered, will do considerable good even in the severest of cases. This is particularly true regarding prophylaxis.

Let us make a clinical survey of some of these.

First in order we will study some of the more popular so-styled remedies, chiefly used in prevention, the bromides. They have been employed in many forms for a long time as a preventive, and enter in one form or another as a basis for many of the patented preparations that have been placed upon the market—*e. g.*, Brushe's Remedy for Seasickness. Dr. Rockwell is a strong advocate in their favor in his article noted above. He maintains that by an early and persistent use of the bromide of sodium in large enough doses previous to sailing favorable prophylactic results will follow. He prescribes it in thirty- or forty-grain doses three times daily for some days before going to sea. From this treatment he reports a number of cures. The theory on which he bases his results is that the bromides acting on those portions of the cerebral cortex subject to the minute shocks (in accordance with the theory in his article already mentioned), obtund sensation, depress the activity of the motor cells, act as a sedative to the spinal cord, and quiet the vomiting centre—in other words, blunting the sensation of the cerebral tissues to the so-called shocks. According to him, this prepares one for seasickness, either preventing it altogether or lessening its power over the individual. In reading these reports the writer has noticed that the statement has not appeared as to whether patients noted have invariably suffered from seasickness under all conditions. The main fault with this theory is that seasickness being a depressing disease, further depression is useless. This further depression must take place physiologically, when the bromides are given in large doses for a long period. In order to gain any prophylaxis such routine must be followed. This in a susceptible case (to bromization) would naturally favor the oncoming of bromism. Their administration at sea, unless used previous to sailing, is valueless, except in a few acutely nervous types. Their ingestion is also apt to derange the stomach and bowels when given in quantity, besides making the patient somnolent, producing a condition and feeling very disagreeable, often worse than the disease itself. Here practice does not seem to bear out the theory.

In two cases coming under my care professionally it was found necessary to prohibit the use of the bromide of potassium to two young women, they having taken such large quantities and so frequently, in the hope of preventing seasickness, that their condition actually became alarming. There seems to have been some cumulative effect here. They were unable to prevent severe attacks of seasickness; an acne rash broke out; fœtor of the breath, and other conditions, such as a much-depressed intellectuality, loss of memory, etc., arose, which altogether made it a very unpleasant voyage for them. Truly, in these cases too much was taken. In a number of cases under observation, for whom bromide prevention had been attempted, the writer can not say that he has observed any real prevention, but in a percentage of the cases the succeeding attack of seasickness was made a little milder than would otherwise be the case were the remedy not tried. If one should, however, desire to use the bromides, the best method undoubtedly is in the form of the bromide of sodium, in thirty or less grain doses thrice daily, for a short time previous to commencing the voyage. At sea it can be given as an effervescing drink with citric acid and the bicarbonate of potassium, according to Hare's formula. The bromide of sodium is a betetr drug than the bromide of potassium, being less apt to disorder the stomach. It can also be stated here that this drug is of some value in treating hysterical women attacked with seasickness. Care should be observed as to how the patient uses the drug.

The next drug to examine is the nitrite of amyl, which is strongly recommended by some authorities. With it I have had but little experience in seasickness, believing it to be rather a dangerous medicine to leave in the hands of a patient for the purpose of experiment. If, through the existence of other lesions, indications for its use should arise, its value in seasickness might be enhanced. It is used by some before going to sea as a vasomotor depressant and a sedative to the vomiting centre. This plea for its use is wrong on theoretical grounds. Its evanescent action is so pronounced that to maintain a constancy of effect—*i. e.*, vasomotor sedation—it would be necessary to administer the drug every few minutes. For obvious reasons, and especially when the concomitant distressing phenomena accompanying its use in sufficient quantity to effect vasomotor sedation are contemplated, it is impracticable.

A teaspoonful each of compound spirits of lavender and limewater, mixed as a dose when seasickness arises, is an agreeable stomachic and antacid, withal very pleasant to the taste. This combination has no power as a preventive.

Hydrobromide of caffeine, the effervescent preparation, has been recommended as a pleasant soothing draught for the relief of the severe headache of seasickness, but also has no value as a preventive measure.

Sulphonal in fifteen-grain doses, taken in hot milk, is strongly vouched for by a prominent London physician as a prophylactic and a curative agent, but in a number of cases in which the writer used this remedy no good results were obtained other than to enable the patient to gain some rest by quieting the existing nervousness and promoting sleep.

In several cases of severe seasickness arising in pregnant women my experience shows that a tabloid of oxalate of cerium, two grains, and cocaine, a quarter of a grain, is excellent, especially when miscarriage or abortion seemed to threaten as a result of the constant vomiting. Naturally, other treatment suited to prevent this disaster should not be neglected. This tabloid in the strength above mentioned should be given every three hours until the danger is averted.

Dr. H. F. Brice, of the White Star steamship Germanic, says to the profession that Horsford's acid phosphate is a valuable remedy for seasickness. I have used it but little. It should be a good stomach tonic.

The attention of medical men has been called to chloral. Several trials have convinced me that it is of little use. It is of too depressing a nature to be carelessly left in the hands of the patient, and, moreover, has no value as a prophylactic, besides running the danger of setting up the chloral habit.

Nitroglycerin has been used with considerable success, according to Dr. H. W. Yemans, of the Red Star Line. It was used by him in sufficient doses to produce and *maintain* a therapeutical effect. He prescribes it in one-drop doses of a one-per-cent. solution every fifteen minutes until therapeusis is reached and then maintaining that condition. Nitroglycerin is a vasodilator, and by the administration of a dose sufficient to maintain a widely dilated blood path secures a uniformity of blood supply to the brain, and thereby relieves the symptoms of reflex phenomena, which are unquestionably due to variations in the cerebral circulation. Dr. Yemans also believes in combining with the above treatment the thorough exhibition of alkalies—*e. g.*, the blue paper of a Seidlitz powder. His theory is that the alkalies neutralize the ill effects resulting from the outpouring of bile acids liable to ferment in the stomach and aggravate existing conditions, also the free escape of serum from the splanchnic blood-vessels in the intestines, both of these conditions occurring in seasickness. This, in the writer's opinion, is rational treatment. I have used nitroglycerin in three cases as a prophylactic. In two of these cases the succeeding attacks of seasickness were undoubtedly made much milder as results in very susceptible patients. In the other case, frontal headache, the supposed therapeutic limit of this drug, developed early, and administration was stopped. This in Dr. Yemans's opinion would have soon passed off, provided care was exercised. Perhaps the future may give us more information as to the powers of nitroglycerin in the treatment of this disease.

Brandy and soda, champagne (dry), in small, but frequently repeated doses, pieces of ice slowly dissolved in the mouth, are proved to be excellent adjuvants and tonics, mainly gastric, in raising the depressed condition of the patient to a better level. When semi-starvation, due to an inability to retain food, is present, their value here is without question, champagne especially. When taken in minute doses the stomach is enabled to slowly take them in, and the patient's condition improves immediately. As soon as the person suffering can retain food the battle is more than half accomplished. Champagne seems to do good because it contains CO_2 bottled before fermentation is complete. The globules of the gas are eagerly drank in by the stomach, much quieting it. It is surprising to notice how quickly some patients improve under this treatment. These stimulants can only be used as aids in treatment, having no power in prophylaxis.

We must now turn our attention to the two drugs which do seem to have some control over this disagreeable affection, especially in preparing the patient to bear an attack much easier, provided they are rightly prescribed. These are digitalin, the most important, and cocaine. Digitalin has the following physiological effects when given in therapeutic dose: a pulse slow, full, regular, and strong, and an increased blood pressure, the peculiarity being constancy; hence a condition of the vessels resulting which enables them to resist the reflex influences having for their effect the ever-varying blood supply evidently resulting in the phenomena of seasickness. This increased blood pressure is due to the action of the vasomotor centres, a direct stimulation of the heart, and finally an action on the vessel walls. The vasomotor action is due to a direct effect upon the centre and peripheral nerve terminals. The slowing of the pulse is caused by stimulation of the vagi directly and the augmented force and volume to the cardiac muscle. Digitalin is at all times a direct circulatory stimulant.

In our study of the pathology of seasickness especial stress was laid upon the changes occurring in the circulation. Theoretically, digitalin being a direct antagonist physiologically to the changes, it surely ought to be worthy of some consideration, and in my practice such is the fact. When given in time and sufficient in dosage, it has proved itself, in my experience, to be a drug of considerable value. The trouble heretofore has been in not obtaining it of sufficient purity and not giving it in doses adequate to produce an effect. It is important to secure that derivative of digitalis which is pure and not contaminated with other principles of this drug that disturb gastric function. If this is not observed, and other preparations known as digitalin are used, results here described will not be gained. The remedy in question is digitalin German Merck pure, an amorphous powder, fully soluble in water, and can be given hypodermically as well as by the mouth. With proper care, when prescribed in one-eighth or one-fourth doses as a granule (Harvey Chemical Company, Saratoga Springs, New York, and Schieffelin & Co., New York city), or hypodermically, three times daily for a couple of weeks before embarking, a good amount of prophylaxis is secured, and if seasickness should occur, the attack will at any rate be much milder than if the remedy were not used. In eight cases in which digitalin was exhibited by the writer as a prophylactic agent, the results were good. All but one of the cases were patients susceptible to seasickness, some very much so. At the same time, the weather conditions at sea were trying to any person. In thirty cases where digitalin was prescribed at sea, and previous to sailing no prophylaxis having been attempted in any, the results were not quite so good, but very encouraging, at least the larger percentage recovering quite rapidly. In the first list, where prevention was undertaken, only one person succumbed, a lady, for a short period, recovering rapidly. After their being a day or two at sea, in nearly all the cases—*i. e.*, for prevention—the dose was materially decreased. Digitalin is contraindicated in but one disease, mitral regurgitation with a dilated auricle. When prescribed as above advised, it has never shown any tendency to cumulative effect. As our knowledge of its use in the treatment of this disease is limited, it should be made an object of thorough study as to its true value here. If it has been carefully tried before sailing, the dose can be much decreased at sea to maintain desired conditions. To Dr. Henry Beates, of Philadelphia, belongs the credit for introducing digitalin to the profession as a remedy in seasickness.

Cocaine, recommended to me by Dr. R. Lloyd Parker, of the American Line steamship St. Louis, is very useful in seasickness in preventing vomiting, if used in time, or stopping it when it occurs. It should be given constantly (when one decides to use it in preference to any other medicine), after the voyage commences, in quarter-of-a-grain doses every two hours, by the mouth, in the form of a tabloid of the hydrochlorate, or in five-drop doses of a four-per-cent. solution. It seems to relieve the patient's extreme depression. If the bromides in moderate doses are given before sailing and cocaine after, the value of the one seems to enhance that of the other, and good results are often obtained. Be careful not to allow a cocaine habit to be formed.

If at times occasions arise at sea when the exhibition of any or all of the remedies is attended with total failure and one is *in extremis*, morphine, atropine, and sometimes strychnine, must still remain to be our sheet anchors, and should never fail to be given in doses sufficient to meet the contingency.

Persons contemplating a sea voyage should be especially careful of the system and general health before sailing, if they hope to escape seasickness. If one is afraid of being attacked or knows that he is susceptible, care should be taken of the stomach and bowels, using a mild aperient a few days before starting and attending no farewell dinners. A position of the stateroom as near as possible to the centre of the ship, but away from the engines, careful eating, which particularly means an avoidance of rich or greasy food and pastry at sea; these are a few of the points that should be remembered. If a mild aperient is desired at sea, nothing is better than a glass of fresh sea water taken in the morning before breakfast. If it should cause some vomiting, it nevertheless tones up the stomach, and a much better feeling ensues. At all times try and keep something on the stomach. If severely attacked and no prophylaxis has been attempted, adhere to the plainest of diets for a few days. Instead of bread or hot biscuits, eat dry toast only, a little finely cut meat if possible, and for drink, good beef tea, or, better still, some dry champagne iced, in doses little and often. If these simple directions are observed, a turn for the better will generally be noticed even in the severest of cases. If indications for medicine should arise, the ship's surgeon will, as a rule, be found to be an experienced man in the treatment of such cases, and will have remedies at his command suitable to the conditions presented, generally one of the above mentioned, that he has discovered to be the best.

In closing this paper, we must still feel that we have yet a great deal to learn about seasickness from all its standpoints, and let us trust that the next few years may see us better able to cope with this disease than we have been in the past, and, best of all, able to prevent its appearance as a bugbear to spoil ocean traveling or enjoying the benefit of scenes abroad. I believe that when modern science has solved the problem of preventing the rolling and pitching of ships at sea in heavy weather, then, and not till then, will a perfect preventive against seasickness, or a specific when it is present, be secured for all types and conditions.

GALLSTONES AS A REASON FOR SUICIDE.

REPORT OF AN AUTOPSY ON A CASE OF SUICIDE WITH CARBOLIC ACID.

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A REPORT of this case is made for several reasons: First, the grounds assigned for the commission of the rash act seemed peculiar and out of the ordinary; second, the immediate and overwhelming influence of the poison on the nervous system is interesting; third, the lack of kidney involvement is also interesting; fourth, the number of gallstones found was sufficiently large to demand that the case go on record; and, lastly, a discussion of the minimum lethal quantity of carbolic acid is important.

On the 11th day of June, this year, I was summoned to the City Hospital to view the remains and to perform an autopsy upon the body of a woman, L. T., who had died the evening previous.

The subject was a fleshy brunette, weighing about a hundred and sixty-five pounds; height, five feet two inches; occupation, prostitute; age, thirty-three years.

The following history was obtainable: The woman had been a member of the demimonde for many years—probably since her eighteenth year. For the past eighteen months she had suffered with frequent attacks of very severe abdominal pain. These would come on at intervals, first of several weeks or even months, but more recently had become very numerous, recurring as often as twice and thrice weekly. A physician had never been consulted, it being assumed by the individual herself, and by her "associates in sin," that the pain was "*only* that of ovarian colic or ovarian neuralgia," from which other inmates of the house were occasionally sufferers. As we shall presently see, these paroxysms of pain were undoubtedly gallstone colic, since at the autopsy the gall bladder was found full of small stones, while the uterus, tubes, and ovaries were in a state of remarkable healthfulness, considering the life the woman had been leading. On this point I have several times been very much surprised, at the autopsy table, to find no pathological changes in the pelvic organs of prostitutes who have probably been plying their vocation for many months and, as in the case at hand, even for years. Ordinarily, we expect to find in these women the ovaries and tubes at least in a state of chronic congestion, if not actually destroyed by some acute or chronic inflammatory and suppurative process, while the presence of a chronic endotrachelitis and chronic endometritis is looked upon as a natural concomitant. As already stated, although L. T. had lived the life of a prostitute for about fifteen years, no pathological changes were visible in her pelvic viscera. The history did not elicit the fact that any gallstones had ever been found in the stools. However, no search had been made for them. It did show that the patient had several times been jaundiced, and, as her former associates related, she had grown morose and sullen in the last months of her life. They described very plainly the change in disposition which had come about. From a bright, cheerful nature the disposition had changed to an ugly, melancholic one. More recently, they told me, she had threatened, during one of the paroxysms, to take her own life, remarking that life was "no longer worth the living" if she had "to endure this great pain." It would seem, then, that a close causative relation existed between the cholelithiasis and the reason or reasons for the suicide. Whether there were other reasons why this woman should have desired to end her life no one knows or will probably ever know Frequently, various other causes are at work with women of this class, who so often take their own lives, and the point of importance in our case was, that none such could be made out. She committed suicide with carbolic acid, and about three ounces were swallowed. This she took at 4.30 P. M. of June 10th. That the deed was premeditated seems indicated by the fact that the poison was swallowed at one gulp, no damage whatsoever having been done by the acid to the anterior aspect of the tongue or mouth. The patient was almost immediately unconscious. The pulse became extremely rapid and feeble, and the breathing very slow. The pupils dilated equally. The breathing was never labored, however, nor was it sighing in character. There was no groaning or other manifestation of pain or suffering, unconsciousness having been so immediate and complete. At 6.15 (about one hour and forty-five minutes after the poison was taken) the patient died at the City Hospital, whither she had been conveyed by the ambulance, and, as stated, the autopsy was held the following morning. My records of the autopsy read as follows: Female, quite fleshy, short stature, brunette, rigor mortis not marked, abundant subcutaneous fat, odor of carbolic acid unmistakable from the mouth. Anterior aspect of mouth and tongue normal in appearance; posterior aspect of tongue and the entire pharynx completely destroyed and whitish in appearance. Stomach: The acid penetrated through the mucous surface, the stratum proprium, and submucosa, and into the area of the circular muscular fibres. The organ was full of liquid and solid food stuffs of various kinds, inclusive of many large pieces of pickle, and to this condition is no doubt attributable the lack of total destruction of the whole thickness of the stomach walls, these articles affording material upon which the acid might spend some of its force. The pylorus seemed to act as a barrier against the further escape of acid, and damage was not great in the small gut, except the first few inches of duodenum. Farther along only a decided congestion and, in some places, an inflammation could be made out. There were no ecchymotic spots visible, and the large gut bore no traces of harm. The destructive action of the poison on the œsophagus was especially marked. Here there could be no food stuff or other protective upon which the acid might spend its force, so this organ "received the brunt of the attack." When removed it was perfectly white and bloodless, and to the touch felt *dead*. It had been thoroughly "tanned," as it were, and, in fact, felt like old leather which had lost its oil and pliability. The stomach, though protected by its contents, was the final receptacle of the acid, therefore it had the same dead and leathery feel. The odor of carbolic acid in the stomach was again unmistakable, and the color reaction with neutral ferric chloride was perfect. The lungs were congested, but crepitated freely. Some superficial emphysema existed in both. There were no pleuritic adhesions (rare), but about an ounce of clear fluid was found in the right pleural cavity. The heart was normal in size and free from fatty infiltration, which seemed remarkable, in view of the fact that the subject was so fleshy. Its muscular fibre was healthy. There were no valvular lesions. The spleen was normal in size and color. Its anterior border extended to the posterior axillary line. The liver was of normal size and color; the gall bladder distended, and reaching some two inches and a half below the costal arch (or free margin of the liver). On section, three hundred and fourteen stones, of the size of small French peas and smaller, were counted, besides fragments sufficient to make about six more. No stones were found impacted in the ducts. A very little thick, viscid bile was present. The urinary bladder was seemingly normal in appearance. It contained about four ounces of clear, limpid urine, which showed no signs or gave any reaction of carbolic acid. This is readily explained when we consider that the kidneys were found to be perfectly normal macroscopically as well as microscopically. Evidently, the toxic action of the poison was so overwhelming that further absorption and elimination were impossible. This seems to have been the case, else the kidneys would have been congested and in all probability ecchymoses would have been plentiful, while the urine would surely have been dark. The brain was normal. The spinal cord was not examined.

Regarding the minimum lethal dose of carbolic acid, there seems to be no consensus of opinion to-day. As little as six minims has caused very alarming symptoms, while a drachm to half an ounce are usually considered fatal. Much depends upon the state of the stomach—whether full or empty—and very much, too, upon the concentration or dilution of the acid. If it is very dilute, death may, nevertheless, finally result from the effect on the lungs and kidneys, where the poison is eliminated. Destruction of the blood also plays a prominent part in these cases. If the acid is highly concentrated, death sometimes results as in prussic-acid poisoning—viz., at once, by paralysis of the vasomotor centres in the medulla, with cardiac depression and suspension of respiration.

323 West Walnut Street.

THE RECTUM

CONSIDERED AS A RECEPTACLE FOR THE GRADUAL ACCUMULATION AND TEMPORARY RETENTION OF THE EXCREMENTAL MATTER.

By WILLIAM BODENHAMER, M. D., LL. D.,
NEW ROCHELLE, N. Y.

(*Concluded from page 598.*)

Now, according to the foregoing authorities, the rectal pouch, after having received the fæcal mass from Mr. O'Beirne's colonic pouch, may voluntarily resist its expulsion down and out, and may even at once return it, or "lift it back" into the colonic pouch. And, furthermore, the rectal pouch being completely disabled by atony of its walls, as these authorities admit, entirely fails to forward the fæcal mass on and out by the short and natural direction, but, by the same authorities, it has the most ample power and strength to return it, or "lift it back" by the long unnatural route whence it came; and that this forward and backward shuttlecock movement between the sigmoid flexure and the rectal pouch may be continued alternately.

The writer is, however, firmly of the belief that atony of the rectal pouch, which consists essentially of the loss, to a greater or less degree, of the tone or contractile power of its muscular coat, disables it from performing effectually its peculiar function of expelling its contents, either down or up. For it must be observed that the fæces are periodically expelled from the healthy rectal pouch, not by peristalsis, but by or through the intervention of several associated agencies or actions, the principal one being the powerful muscular contractions of the rectal pouch itself, aided by the two anal sphincters, and the levator ani also assisting in the act, by pressing the rectum forward and upward, and thus obliterating its curve. The diaphragm and other abdominal muscles co-operate in the act of defæcation, but only in a subordinate manner. It may here be remarked that the peristaltic as well as the abnormal antiperistaltic action of the muscular coat of the alimentary canal is generally admitted, and it is also admitted that the latter action, as a general rule, appears to be exercised only on particular or extraordinary occasions or emergencies. The question, however, may be asked, That, should any portion of the large intestines be subjected to atony of its muscular fibres, would such portion be capable of performing efficiently either peristalsis or antiperistalsis?

The writer must here also observe that the distinguished Professor Austin Flint, Jr., of New York, has also adopted the theory of Mr. O'Beirne—namely, that the sigmoid flexure of the colon is the organ in which the fæces are arrested and accumulate until the period arrives for their final discharge—and that the arguments of Mr. O'Beirne are conclusive against the view that the rectum is such an organ; that the rectum, under normal conditions, is always empty of fæces and gas and firmly contracted, and that it is, indeed, a fact familiar to every surgeon that the rectum usually contains nothing which can be reached by the finger in physical examinations; that the sensation which leads to an effort to discharge the fæces is due to the accumulation of matters in the sigmoid flexure, etc. (*A Text-book of Human Physiology*, fourth edition, pp. 268, 269, 270, imp. 8vo, New York, 1888).

The Sphincter of O'Beirne, so called.—Now, Mr. O'Beirne, in order to save his theory and his colonic receptacle, felt the absolute necessity of equipping it, not only with a recto-colonic sphincter muscle to guard it, but also with sentient nerves to communicate the admonition for the expulsion of its contents. With regard, however, to this so-called sphincter, the writer must here remark that it has long since been demonstrated by a few very eminent French anatomists, as well as by himself, in the frequent examinations made of this particular part of the intestinal canal, that in that part of it in which the colon and rectum coalesce there is found a slight stenosis or contraction, marked externally by a small circular depression, and internally, in the same situation, by a little projection of the mucous membrane. This fleshy ring, or annulus, which exactly defines the boundary of the colon and the rectum, is Mr. O'Beirne's recto-colonic sphincter muscle, which he so highly extols, and to which he attributes the most extraordinary anatomical and physiological phenomena (*op. cit.*, pp. 29, 58, 59, 63).

The writer entirely dissents from the arguments and conclusions of Mr. O'Beirne regarding his recto-colonic sphinter, in bestowing upon it the power to act as a strong barrier to the passage of the fæces, or imparting to it important functions which alone belong to sphincter muscles—such, for instance, as those important ones at the inferior end of the rectum. This fleshy ring positively lacks a sufficient number of the circular muscular fibres, aggregated as a band, to give it a status as an efficient constrictor or sphincter, or to enable it to accomplish what Mr. O'Beirne states for it. Indeed, the feeble organization of this annulus, with its apparent rudimental aspect, entirely lacks that firmness of form and development which are necessary to give it an organic individuality as a sphincter muscle. This contracted ring merely forms a slight hindrance to the passage of the fæces, not on account, however, of possessing any sphincteric power, but solely owing to the limited calibre of the canal itself at that point. This so-called sphincter, then, which never completely closes this canal firmly, can not be even assumed as such. Indeed, such a sphincter, at the place indicated, has never been demonstrated, nor are the data sufficient to warrant the unqualified acceptance of this alleged correlation.

Dr. Henry V. Gray, of Roanoke, Virginia, an enthusiastic admirer of Mr. O'Beirne and his theory, when speaking of this so-called sphincter, says that "Mr. O'Beirne proved that it is composed of muscular fibres, which are truly sphincteric in their action." This fact, says Dr. Gray, led our anatomists to name this sphincter after its distinguished observer, "sphincter of O'Beirne" (*Medical Record* for December 17, 1892, p. 705).

Professor J. McF. Gaston, of Atlanta, Georgia, in an article on Stricture of the Rectum with Fistula, speaks of this so-called sphincter without naming Mr. O'Beirne, the whole of whose theory, however, he has evidently accepted and adopted. When speaking of this so-called sphincter, he declares that "it is a veritable superior sphincter" (*The Physician's Magazine* for December, 1885, p. 78).

This so-called sphincter was considered to be a congenital malformation by the following very distinguished authors: Mr. White (*Observations on Stricture of the Rectum*, third edition, p. 26, 8vo, Bath, 1820), Mr. Salmon (*A Practical Essay on Stricture of the Rectum*, etc., fourth edition, p. 18, 8vo, London, 1833), and Mr. Calvert (*A Practical Treatise on Hæmorrhoids, Strictures, and other Important Diseases of the Rectum and Anus*, p. 158, 8vo, London, 1824).

The late learned and eminent German anatomist, Professor Hyrtl, a few years ago described a sphincter muscle several inches below the point of Mr. O'Beirne's so-called sphincter, located at or about the union of the first and second curves of the rectum, which he denominated *sphincter ani tertius* (*Handbuch der topographischen Anatomie*, Band ii, section 36, p. 162, imp. 8vo, Wien, 1882).

As to Mr. O'Beirne's physiological views concerning his colonic receptacle and sphincter, they, if possible, are even more exaggerated and extravagant than his anatomical views, already described. His fertile genius has clothed the sigmoid flexure of the colon and his recto-colonic sphincter with branches of nerves, directly from the cerebro-spinal system, which bring the contraction or movements of these two organs directly under the will (*op. cit.*, p. 10). This, in the opinion of the writer, is among the wildest of all his assumptions. Indeed, the facts, reasonings, and references brought forward by Mr. O'Beirne in support of his curious theory are anything but convincing or satisfactory. He generalizes entirely too much; even the opposite extreme would be far preferable.

Nervous Endowment of the Rectum.—The writer will now speak very plainly and briefly of the nervous enrichment of the rectum, but more especially of its inferior portion. This organ is abundantly supplied with nerves directly from the motific and sensific columns of the spinal marrow, and it is the only portion of the intestinal canal which is thus furnished with nervous influence directly from the great source of motion and sensation. This fact at once explains the very remarkable sensibility and irritability which attend some of the very painful affections of this organ. Indeed, it has long since been known and demonstrated by eminent anatomists and physiologists that the rectum, in addition to the organic sensibility with which it is endowed, in common with all parts of the intestinal canal, by nerves from the ganglionic system, is also endowed with animal sensibility by nerves from the cerebro-spinal system, the peculiar property of which is that kind of sensibility which we can plainly perceive, and of which we are distinctly conscious. By this last peculiar nervous endowment, the rectal pouch is enabled to give admonition of the presence of the collected fæcal mass in its own cavity, a faculty which no other portion of the intestinal tube possesses—no, not even Mr. O'Beirne's colonic receptacle; for, although the organic sensibility of the whole canal enables any part of it to perceive the presence itself of the fæcal mass, which stimulates and produces peristaltic action, yet we ourselves are not conscious of the passage of this mass through the intestines, nor of its presence at any particular part, not even at the sigmoid flexure of the colon; no sooner, however, has a sufficient quantity collected in the rectal pouch than a sensation is experienced which informs us of its presence there, and which calls for its expulsion. No such call or admonition can therefore possibly come from the coiled portion of the colon, as Mr. O'Beirne alleges (*op. cit.*, p. 18). Mr. Black, of London, more than half a century ago made the following very pertinent remarks upon this very subject. He says: "After the deglutition of our food we have no further control over its mode of action and passage through the stomach and bowels than if it had been committed to the interior of another animal; and it is only when the refuse or recrementitious matter arrives at the lower part of the alimentary canal that we can again recover cognizance or control over the natural and independent disposal of our aliments. As the ganglionic system of nerves takes up the office of digestion and assimilation from the voluntary nerves at the threshold of the alimentary conduit, so they in time consign the recrementitious matters over to the same sentient and motor nerves at the opposite outlet of the body" (*A Manual on the Bowels*, p. 166, 12mo, London, 1840).

The Nisus Defæcans.—The writer will now conclude by briefly remarking that the uneasy sensation which arrests the attention of the will to the act of defæcation, as has already been plainly shown, originates or resides solely in the rectal pouch, when all the parts immediately concerned in the process are in a normal and healthy condition; and that it is through the sentient nerves, possessed by the rectal pouch alone, that the sensation to evacuate its contents is communicated. The association of these different nerves is brought into action periodically by the fæcal distention of the walls of the rectal pouch arriving at a certain stage.

Now, Mr. O'Beirne, on the contrary, maintains that the sensation experienced of desire to expel the fæcal matter from his colonic receptacle comes directly from that organ, as has already been shown, but he fails, in the opinion of the writer, to show plainly and satisfactorily by or through what means or agency it is communicated; for the fact is well known that the sigmoid flexure of the colon is not supplied with the proper nerves to communicate it, and is not under the influence of the will. Indeed, no intimation whatever do we ever receive, directly or indirectly, from the sigmoid flexure of the colon that there is fæcal matter in its cavity which calls for its evacuation.

August 14, 1897.

SOME OBSERVATIONS ON
SUPPURATING HIDRADENITIS
OCCURRING DURING EXTREME HOT WEATHER.*

By JOHN CABOT, M. D.

During the ten days of continuous hot weather in the summer of 1896 the thermometer in New York in the middle of the day stood at 100° to 103° F. in the shade, with a relative humidity of 85° to 95°. The nights were almost as oppressive, the thermometer often showing 90° F. in rooms opening on the outside air. Over five hundred people lost their lives from the heat in this city alone during those ten days. A marked increase of the inflammatory skin troubles was evident, and many cases of an acute pustular outbreak were seen, most of them from the tenement-house district of "Hell's Kitchen." In many instances these followed direct exposure to the rays of the sun, but others, and some of the most severe cases, without the direct irritation, occurred in those who worked in confined and ill-ventilated places where the temperature was often higher than outdoors.

Out of thirty-two cases seen in dispensary and private practice, the following short notes, taken from my history books, are sufficient to show some of the most salient features:

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* Read before the Manhattan Medical and Surgical Society.

Case I.—G. B., thirty-four years old, married, longshoreman, a large and well-nourished man. Well up to three days ago, when the present eruption began, after working a number of hours while stripped to the waist in the hold of a ship where it was excessively hot. The back of his neck, shoulders, upper arms, and, to a lesser degree, the face are reddened, very tender to the touch, and thickly studded with papules and pustules an eighth to three eighths of an inch in diameter, between which are the lesions of an ordinary miliaria. Pain on movement and swelling is so great that he is unable to raise his hands to his head. Temperature, 100.8° F.; pulse, 88. Under laxative treatment and the application of cooling lotions the inflammation subsided sufficiently in four days for him to return to work, although many lesions remained.

Case II.—J. D., twenty years old, single, employed in box factory. He is not aware of any excessive exposure to heat, but for twenty-four hours past the forearms, backs of hands, face, and upper part of chest have been itching, red, and sore, with burning sensation last night. To-day these regions are covered with hard and deep-seated papules and vesicles a sixteenth to a fourth of an inch in diameter. Forearms are much swollen; forty-eight hours later many lesions were pustular. Successive crops of pustules appeared for a number of days, the weather continuing very hot, but he completely recovered in ten days.

Case III.—Miss C. R., twenty-eight years old, clerk; working by gaslight in an ill-ventilated and hot office of a grocery store. General health good, and has never had any skin trouble before. Three days ago her forehead began to break out in papules, spreading rapidly the same day to cheeks and chin. The papules quickly developed into vesicles and pustules in successive crops. The face swelled yesterday so that she was unable to see out of her eyes. Itching and burning were so intense that sleep was impossible last night. The face is now moderately swollen, and the eyelids are so œdematous that she can only open them halfway. The whole face looks as if broken out with variola, being covered with pustules (without central depression) an eighth to a fourth of an inch in diameter, rather "shotty" to the touch, each pustule being surrounded by a slight areola an eighth to a fourth of an inch wide, and often coalescing with the neighboring pustule. Itching is moderate. Miliarial eruption over the whole body and limbs. Temperature, 99.8° F.; pulse, 88. Rochelle salts, and a one-per-cent. solution of creolin externally, was all the treatment given. The eruption gradually declined, and in ten days the skin of the face and body was normal, except that slight scarring and pitting remained.

Case IV.—G. H., seventeen years old, clerk in dry-goods store. Well nourished, but anæmic and nervous. After exposure to the sun, while on the water day before yesterday, his face, neck, and arms became red and puffy, with breaking out of a papulo-vesicular eruption. In the evening he noticed that the whole body was red and sore, and to-day the face and backs of hands and arms are thickly set with vesicles and pustules from a sixteenth to a fourth of an inch in diameter.

The body and limbs are covered with miliaria. Temperature, 99.6° F.; pulse, 84.

The eruption was well a week later, but a deep furuncle developed, three fourths of an inch in diameter, in the centre of the right cheek at the same time, and five days later his mother appeared with a furuncle of the same size and character on the left cheek, probably from contact, as they acknowledged rubbing their cheeks together.

Case V.—Miss B. P., twenty-three years old; student. She was not out of doors more than usual, but was bitten by mosquitoes in a very free way last night, and thought her entire trouble was due to this cause.

She lay awake all night from the intense burning and itching, and found this morning that the whole surface of the body was red and covered with large wheals. These developed into vesicles and pustules, and ran the usual course, although the urticarial element seemed more prominent at first.

Case VI.—C. L., thirteen months old. The mother took the child two days ago to the seashore and allowed it to play on the sand a large portion of the day. Yesterday the epidermis on arms, neck, and face was raised in large blisters, and the miliaria was so marked over the whole body that the mother thought the child was developing scarlatina, especially as it was very restless, feverish, and fretful. Rectal temperature is now normal. Papules and vesicles are thickly set over upper arms, face, chest, and legs, with the loose epidermis on the hands, forearms, and face where the blisters have been. Pustules an eighth to a fourth of an inch in diameter developed, and two days later the child had infected other portions of the body, buttocks, back, and legs with contagious impetigo, occurring in large blebs, which ruptured and left the characteristic "stuck-on" crusts. The first blisters on the arms and face from the heat had a thicker and darker crust. A five-per-cent. salicylated ointment was used, and the child was well in ten days, some scar tissue remaining.

Case VII.—Mary McD., twenty-four years old; housemaid. Poorly nourished and anæmic. After a trip to the seashore ten days ago there developed vesicular and pustular lesions, similar to those in the foregoing cases, on the backs of hands, forearms, chest, neck, and face, and on which she used "cold cream," without consulting a physician. Five days ago noticed that two phalangeal joints were enlarged and painful. Pus formed, and one of the swellings opened spontaneously day before yesterday. Other metacarpo-phalangeal joints subsequently became affected, until now fourteen joints are involved in various stages of pus formation, and the hands are useless.

Iron and laxatives were given, the pus was evacuated by incision, the hands dressed antiseptically and put in a sling. Two more joints were infected in the next few days, but at the end of two weeks she was practically well, with good movement in all the joints.

In reviewing the cases we find that the lesions were generally confined to the exposed portions of the body, as the arms, face, and chest, and almost all combining a general miliaria in various degrees of severity with the vesiculo-pustular lesion. All ages were affected, from the babe in arms to some of over seventy years. Many cases showed marked virulence, the face and arms being frequently puffed and swollen, sometimes to the extent of closing the eyes; and in some cases a moderate rise of temperature was noted.

Superficial and deep furuncles and abscesses were common, and a number of cases were noted in which other members of the family, otherwise healthy, developed furuncles, presumably by inoculation. One of the most severe was in a nursing mother, probably infected from her baby, in whom an abscess of the breast formed and honeycombed half the breast; and another in which pus successively invaded many of the joints of the hands.

Folliculitis, occurring mostly on the extremities, was often observed in those who were free from the vesicles and pustules, possibly from hypersecretion or other irritation.

Urticaria was prominent in a few cases.

Contagious impetigo was quite common, both in the patient and in other members of the family.

Microscopical examination of the contents of the pustules was negative and unsatisfactory, showing little that might be characteristic. The only micro-organisms found proved on cultivation to be *Staphylococcus pyogenes aureus* and *albus*. Pus inoculated on the sound skin, and observed under the protection of a cover glass, showed at the end of twenty-four hours a slight blush of redness; twenty-four hours later there was a millet-seed-sized vesicle, and in another twenty-four hours it was slightly larger, and the contents cloudy. A day later the pustule was whiter, and had begun to wrinkle and fade away, and two days thereafter there was left only a slight crust and redness. Thus the cycle, when undisturbed, seemed to be about five or six days and of the character of that of contagious impetigo.

Little is seen in our temperate climate of these severe inflammations of the sweat glands, and in many of the text-books they are not mentioned. Dr. S. Pollitzer, in Morrow's *System of Dermatology*, vol. iii, p. 771, speaks of the occurrence usually in single lesions, although many *may* be present.

The lesions are a dense aggregation of small round cells, epithelioid cells, and large multinuclear masses, resembling giant cells, which are very numerous, of great variety in size and shape, and occur in clusters. They differ from the typical formative giant cells in being of more regular outline, the nuclei are distributed less regularly, and sometimes faint tracings, like contours of cells, appear in them. Sweat glands are absent from the middle of the tumor, but toward its border glands with swollen and inglutinated cells, whose nuclei do not take stains well, may be seen. The epidermis shows no change of importance. The hair follicles are unaffected. The endothelium of the blood-vessels is swollen and may occlude the lumen of the capillaries.

The pathological process is an acute diffuse inflammation of the sweat glands and periglandular tissue, terminating in suppuration and destruction of the gland.

Bacteriological investigations have yielded negative results. Many ætiological factors are mentioned by different authors, such as uncleanliness, cold, irritating applications, parasites, etc., as well as various systemic causes, such as constipation, dyspepsia, pruritus, etc. In the cases under observation it certainly seemed to be the extreme heat with a very probable supersecretion of sweat.

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Therapeutical Notes.

An Application for Parasitic Baldness.—Sabouraud (*Indépendance médicale*, September 29th) recommends the following formula:

℞	Beef marrow	100 parts;
	Balsam of Peru	20 "
	Precipitated sulphur	10 "
	Quinine, Pilocarpine, each	4 "

M. S.: To be rubbed on every night, and the treatment to be suspended on the occurrence of signs of cutaneous irritation.

Guaiaquin.—This is the trade name of a new preparation which is chemically a guaiacolbisulphonate of quinine, $C_6H_4O_2CH_3HSO_3C_{20}H_{24}N_2O_2$, a bitter, acid salt in the form of a yellowish crystalline powder, very soluble in water, in alcohol, and in dilute acids. It is free from both the odor and the causticity of guaiacol. It is used as an internal antiseptic, as a remedy for malarial affections, and as a stimulant of the gastro-intestinal glands. Anæmia is one of the diseases in which it has been found particularly useful. The dose for adults ranges from two to ten grains three times a day. A ten-per-cent. solution may be used subcutaneously with very little pain. Guaiaquin is very hygroscopic; consequently it should be kept in well-stoppered bottles in a dry, cool place. It is best given in capsules or cachets.

Guaiacol in the Treatment of Chancroid.—A writer in the *Journal de médecine de Paris* for September 26th states that in all but one of thirty cases Dr. Djélaled-din-Moukhtar brought about a speedy cure by daily applications of guaiacol. It is applied gently at first, in order that it may anæsthetize the part; then it is mopped thoroughly upon the sore for its caustic action.

Schleich's Anæsthetic Salts.—According to the *Centralblatt für die gesammte Therapie* for October, there are three kinds of Schleich's tablets on the market, numbered 1, 2, and 3, as follows:

1.	℞	Cocaine hydrochloride	3 grains;
		Morphine hydrochloride	0.675 grain;
		Sterilized sodium chloride	3 grains.

M. S.: To be dissolved in 1,500 grains of distilled water.

2.	℞	Cocaine hydrochloride	1.50 grain;
		Morphine hydrochloride	0.675 "
		Sterilized sodium chloride	3 grains.

M. S.: To be dissolved in 1,500 grains of distilled water.

3.	℞	Cocaine hydrochloride	1.50 grain;
		Morphine hydrochloride	0.075 "
		Sterilized sodium chloride	3 grains.

M. S.: To be dissolved in 1,500 grains of distilled water.

Presumably these are to be employed for the production of infiltration anæsthesia.

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SOME OF THE FELICITIES OF MEDICAL PRACTICE IN FRANCE.

The French people seem to be affected at present with a severe exacerbation of the traditional propensity to abuse and persecute physicians, a propensity, unfortunately, not by any means confined to them. For months past our French exchanges have been complaining of this state of things. If the Laporte affair proves to be its culmination, our brethren in France are to be congratulated. It seems that Dr. Laporte is a physician employed on the Paris night medical service and paid a niggardly stipend from the public funds. A physician so employed has to respond to every call, day or night, and is supposed to bring into play the degree of skill that is expected of practitioners that have a large and remunerative private patronage. Dr. Laporte was called at night to attend a woman in labor. He had the misfortune to lose both mother and child. Dr. Socquet and Dr. Maygrier were deputed to inquire into his conduct of the case, the accused having already been cast into prison, and their conclusion was that he had committed "homicide by imprudence."

Commenting on this case, the *Gazette médicale de Nantes* for October 9th says: "It is not that we have any prepossession whatever for the inculpated man; we do not know him and had never heard of him; he is obscure, poor, and unknown. But we affirm that, if things are to go on in this way, if all physicians and surgeons, great or not, are to be prosecuted on account of their unfortunate and imprudent operations, the prisons of France will have to be enlarged on a grand scale." Our contemporary goes on to divide imprudence into the legitimate and the illegitimate, and asks which variety should be imputed to Dr. Laporte. It admits that his skill was not equal to the situation, and is even willing to recognize that he acted with excessive hardihood. The experts found that serious injuries had been inflicted upon the woman. But, asks the *Gazette,* should the physician therefore be treated like a criminal? He did his best, it says, and many another man would have acted as he did, that is to say, imprudently, unskillfully, and unsuccessfully.

"What," asks the *Gazette,* "is a physician's position, especially at night, in the face of a difficult accouchement? Frightful, abominable. It is a physical and moral torture of which the public has no idea. A man is torn from his sleep, destitute of ordinary appliances, but obliged to act without losing an instant, on pain of seeing a woman and a child die under his eyes. He is isolated, dependent on his own resources alone; he has to improvise a treatment, and he knows that he will be blamed if things fail to go well. He believes that he has not time to send for help; to procure assistance might take an hour or two. If the catastrophe is imminent, he is forced to act; so much the worse if he is not provided with appliances or if he is unskillful. He has been called, he is there, and he must sacrifice himself. He takes whatever is at hand and screws up his courage, but, if he realizes his inexperience, he loses his head." A master of obstetrics, the *Gazette* continues, with more knowledge and better instruments, perhaps would not have succeeded better.

"At all events," says the *Gazette,* "everybody admits that in a pressing case the accoucheur is warranted in employing whatever means may be at hand. Do you believe that it was for his own pleasure that our colleague made use of instruments foreign to the surgical arsenal? Are you sure, for that matter, that he would have done the operation better with perfect appliances? Should he have abandoned his patient because he was not well assisted and because he was not in the front rank of obstetricians?" It is abundantly evident, says the writer, that such precedents as the Laporte case and another referred to in the opening paragraph of his article must sooner or later lead to a result of which the sick will be the first victims. Men will no longer dare to take the risk of attempting an operation that is not sure to succeed; and when, he asks, is success assured? Medical men will steal away and leave people to perish without trying anything, and that, he thinks, will be justice. "Think, then," he exclaims, "that perhaps Mazas is at the end of your forceps or your bistoury!" Mazas, apparently, is the name of a prison.

When one practises medicine under the conditions that surrounded Dr. Laporte—that is, being paid by the community to attend to every call—says the *Gazette,* he runs grave risks. Not only is he outrageously worked, but he is held bound to cure everybody and to perform miracles, failing in which, he is treated as negligent, incapable, or criminal. A collective *clientèle,* under any of its forms, our contemporary continues, has come to look upon a physician drawing a stipend from it as a person who does not care for it and is too prosperous to think of great emoluments. We should never, says the writer, accept appointments under which our services are to be paid for by clubs; let us do our gratuitous work on a personal basis.

In this country such an unfortunate and unwise conduct of a case as Dr. Laporte seems to have carried out would at most be looked upon as malpractice, and the remedy would lie in a suit for damages; the physician's errors, even if gross, would not be a penal offense. What we miscall "criminal malpractice," meaning the criminal induction of abortion or attempting to induce it, is crime pure and simple; it differs *toto cœlo* from improper practice founded on ignorance and unconnected with evil intent. Apparently there is something in French jurisprudence, as regards its treatment of practitioners of medicine, that needs to be tempered with common sense, to say nothing of mercy.

THE IDENTIFICATION OF THE DEAD.

There has been renewed interest in this subject on the part of the general public since the Charity Bazar fire in Paris, and Dr. Marcel Baudouin contributes some notable points in an article published in the *Progrès médical* for October 2d. In such catastrophes, he remarks, the body is almost entirely consumed, and the greatest amount of information as to the identity of the person, with the exception of articles found about the remains, is to be derived from the skeleton, and especially from the teeth, which often escape the violence of the fire. When, says M. Baudouin, the bodies are those of well-to-do persons, and above all those of people in high life, each individual may be assumed to have a dental apparatus which of itself possesses very characteristic features. In the first place, the mere form of the jaws is a guide to the sex and the age, and the same is true of the number of teeth that remain. But, more than all this, each individual tooth is a valuable piece of evidence. If it is sound, it may, by its whiteness, its form, etc., lead to the recognition of sex and social condition; if it is diseased and has been subjected to treatment, it may prove the means of a positive identification. In the case of the body of the Duchess d'Alençon, who perished in the Bazar fire, says M. Baudouin, her dentist identified her jaw in the charred remains of a skull by examining it in the light of notes in his case-book. In this connection, some of our readers will doubtless recall the Parkman murder case, which occurred in Boston many years ago. The murderer was a professor of chemistry, and he disposed of his victim's body by consuming it entirely, as he supposed, in his furnace. But Parkman had been provided with artificial teeth, and those teeth escaped destruction. The dentist who had made them swore to their identity, and it was mainly on his testimony that Professor Webster, a fearfully tempted man, was convicted.

In identifying the trunk of a decapitated body, says M. Baudouin, there are certain signs that may be of great service. He cites the case of the supposed corpse of Mme. de Luppé, who was known to have undergone the operation of ovariotomy. No trace of an incision was found on the abdomen. Pure anthropometry, says M. Baudouin, will not always suffice for the identification of a dead body, and it is the purpose of his article to urge closer cooperation between that science, medicine, and the police system. Sharp as the police, the experts, and the courts are, he declares, they still let slip many data—documents, written or unwritten, he calls them—that might be most useful. Among them he mentions the intellectual peculiarities of the individual, but on this point he refrains from enlarging saying that to go into the details would lead him too far. The person's handwriting is next spoken of. Henceforth, says M. Baudouin, it should always be the subject of careful investigation. He avows that he is no graphologist, but says that for him the handwriting is as expressive as any man's face. It is useless to say, he adds, that chirography may be simulated, for so, too, may facial expression. While he does not accept the handwriting as an indisputable index of character, he does regard it as a valuable sign of identity, quite as much as the prints of a man's bare feet, or Galton's lines on the thumb, or Bertillon's measurements of the bones.

MINOR PARAGRAPHS.

SEA WATER *VERSUS* ARTIFICIAL SERUM.

At a recent meeting of the Paris Society of Biology (*Gazette hebdomadaire de médecine et de chirurgie*, October 14th) M. Quinton said that his researches in evolution had led him to the belief that the *milieu intérieur* of such high organisms as birds and mammals must be a marine medium—chemically, nothing more or less than sea water. On this theory, he had bled animals to such an extent that they would surely have died if left to themselves, and then administered to them intravenous injections of sea water diluted with rather more than twice its weight of distilled water. They had recovered very promptly. He is reported as having declared that sea water was superior to artificial serum for physiological purposes, but we do not see that he substantiated his declaration.

THYMUS MEDICATION IN CHLOROSIS.

Blondel (*Revue de thérapeutique*, April 15, 1897; *Centralblatt für innere Medicin*, September 25, 1897) supports the view that chlorosis is the result of poisoning by the retention of certain products which normally are counteracted by the internal secretion of the thymus gland or that of the ovary, and that it occurs during an "interregnum" which is the result of premature atrophy of the thymus or the delayed assumption of functional activity by the ovaries. On this theory, he has administered the thymus gland in three cases, and the results have been favorable.

THE QUESTION OF THE EXISTENCE OF TUBERCLE BACILLI IN BUTTER.

OBERMÜTTER (*Hygienische Rundschau*, July 15th; *Lyon médical*, September 19th), who in 1895 found Koch's bacilli in milk, now reports their presence in butter. Fourteen specimens were obtained from the Berlin markets, and all of them gave rise to tuberculosis in guinea-pigs. On the other hand, Miss Lydia Rabinovitch, working in the Institute of Infectious Diseases, under Koch's direction (*Deutsche medicinische Wochenschrift*, August 5th; *Lyon médical*, September 19th), affirms that she has examined eighty specimens of butter from different shops and markets, and has not found Koch's bacilli once. It is true that in more than twenty-eight per cent. of the cases inoculation gave rise to lesions having a tuberculous gross and microscopical appearance, but the disease was a pseudo-tuberculosis and was due to a bacillus resembling Koch's in its stain reactions, but differing from it in its cultures and in its pathogenic properties.

SELF-INTOXICATION.

WE commend to our readers' particular attention an abstract, published in the miscellany department of this number of the *Journal*, of Dr. Herter's address on this subject. We are indebted to the *Cleveland Journal of Medicine* for advance sheets, enabling us to give early insertion to the abstract. We do not recall any other article in which, within the limits of an address, this interesting subject has been so satisfactorily treated of.

HEREDITARY INTERMITTENT HYDRARTHROSIS.

AT a recent meeting of the French Association for the Advancement of the Sciences (*Lyon médical*, September 19th) M. Blanc reported the case of a young girl who had articular rheumatism when she was seven years old, and afterward for five years, every ten days, attacks of hydrarthrosis of the left knee. The attacks were cured by a few weeks' rest. For twenty-two years the girl's mother had had similar attacks.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 2, 1897:

DISEASES.	Week ending Oct. 26.		Week ending Nov. 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	13	27	7
Scarlet fever	108	7	87	7
Cerebro-spinal meningitis	0	0	0	0
Measles	121	6	147	6
Diphtheria	154	15	119	23
Croup	1	0	1	3
Tuberculosis	169	122	179	104

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending October 30, 1897:

Yellow Fever—United States.

Mobile, Ala	Oct. 23–29	40 cases,	5 deaths.
Montgomery, Ala	Oct. 21–29	99 "	6 "
Notasulga, Ala	Oct. 25	1 case.	
Sandy Ridge, Ala	Oct. 25	1 "	
Selma, Ala	Oct. 23–26	17 cases,	1 death.
Whistler, Ala	Oct. 29	Not stated,	2 deaths.
Atlanta, Ga	Oct. 24	1 case (refugee).	
" "	Oct. 27	1 case (detention camp).	
Baton Rouge, La	Oct. 22–28	3 cases.	
Franklin, La	Oct. 20, 21	2 "	
New Orleans, La	Oct. 23–29	367 "	52 deaths.
Patterson, La	Oct. 21	1 case.	
Bay St. Louis, Miss	Oct. 23–28	33 cases,	3 "
Biloxi, Miss	Oct. 23–29	91 "	5 "
Cayuga, Miss	Oct. 23–28	5 cases.	
Clinton, Miss	Oct. 23–29	7 "	
County Farm, Miss	Oct. 25	1 case.	
Edwards, Miss	Oct. 23–29	19 cases,	1 death.
Hinds County Convict Camp	Oct. 23–27	6 "	
McHenry, Miss	Oct. 23–29	6 "	
Nitta Yuma, Miss	Oct. 23, 24	6 "	
Pascagoula, Miss	Oct. 23–29	11 "	
Scranton, Miss	Oct. 23–29	75 "	4 deaths.
Memphis, Tenn	Oct. 23–29	31 "	3 "
Galveston, Texas	Oct. 27	Yellow fever present.	

Yellow Fever—Foreign.

Para, Brazil	Oct. 2–9		5 deaths.
Cienfuegos, Cuba	Oct. 10–17		2 "
Havana, Cuba	Oct. 14–21		13 "
Matanzas, Cuba	Oct. 6–20		6 "
Kingston, Jamaica	July 9–Oct. 9	44 cases,	23 "
Manchester, Jamaica	July 9–Oct. 9	7 "	2 "
Port Antonio, Jamaica	July 9–Oct 9	1 case,	1 death.
St. Elizabeth, Jamaica	July 9–Oct. 9	1 "	1 "
San Salvador	July 1–31	38 cases,	11 deaths.
"	Aug. 1–31	54 "	16 "
"	Sept. 1–30	34 "	12 "

Cholera—Foreign.

Hong Kong, China	Sept. 4–11		1 death.
Calcutta, India	Sept. 11–25		21 deaths.
Madras, India	Oct. 18–24		7 "
Singapore, India	Aug. 1–31		1 death.
Kanagawa Ken, Japan	Sept. 23–30	1 case,	1 "
Tokyo Fu, Japan	Sept. 23–30	3 cases,	2 deaths.

Plague—Foreign.

Bombay, India	Sept. 14–21		35 deaths.

Small-pox—United States.

New Orleans, La	Oct. 16–23	1 case.	
McKeesport, Pa	Oct. 16–23		1 death.

Small-pox—Foreign.

Alexandria, Egypt	Aug. 7–Sept. 16		2 deaths.
Cairo, Egypt	Aug 7–Sept. 16		6 "
Calcutta, India	Sept. 4–25		3 "
Glasgow, Scotland	Oct. 2–9	10 cases.	
Odessa, Russia	Oct. 2–9	1 case.	
Moscow, Russia	Sept 25–Oct. 2	3 cases,	1 death.
St. Petersburg, Russia	Oct. 2–9	4 "	4 deaths.
Warsaw, Russia	Oct. 2–9		10 "

The Craig Colony for Epileptics at Sonyea, Livingston County, N. Y., closed its fourth fiscal year on September 30th. There were at that time two hundred and fourteen patients in the colony, the majority of whom had been transferred from the various county houses throughout the State. New buildings are in course of construction which, when completed, will enable the colony to accommodate a hundred and forty additional patients, making the total population about three hundred and fifty. It is estimated by State charity officials that this number represents about one third of the total number of epileptics now on public charge throughout the State.

The medical superintendent, Dr William P. Spratling, reports a great increase in the value of the agricultural and industrial products of the colony over last year's, so that the ratio of earnings of the patients to the cost of their maintenance is even larger than that of last year, which was a little over fifty per cent.

A laboratory for the use of a pathologist and pathological chemist is being constructed. Dr. Christian A. Herter, of New York, has been appointed pathological chemist, and Dr. Ira Van Gieson, of New York, consulting pathologist to the colony. Dr. Frederick Peterson, of New York, was re-elected president of the board of managers.

The managers, at their annual meeting, decided to ask the coming legislature for $200,000 for dormitory buildings, in order that they might increase the residence capacity of the colony for patients.

The New York Academy of Medicine.—At the last general meeting, on Thursday evening, November 4th, the special order was a paper on The Sterilization of Urethral Instruments, by Dr. Edward Martin, of Philadelphia.

At the next meeting of the Section in General Surgery, on Monday evening, November 8th, the following papers are to be read: A Report on Thirty-two Cases of Cancer of the Breast, by Charles N. Dowd; and Bottini's Method for the Galvano-caustic Radical Treatment of Hypertrophy of the Prostate, with Demonstration of Instruments, by Dr. Willy Meyer.

At the next meeting of the Section in Pædiatrics, on Thursday evening, November 11th, Dr. Joseph Collins will read a paper on The Clinical and Pathological Interpretation of Choreiform Movements called Tics, with Special Reference to their Treatment.

The Association of the Big Four Railway Surgeons will hold its annual meeting at the Hotel Dennison, in Indianapolis, on Thursday, November 11th, under the presidency of Dr. C. P. Frye, who will deliver an address. Dr. George F. Beasley, of La Fayette, Indiana, will read a paper on Amputations.

The Western Surgical and Gynæcological Association will hold its seventh annual meeting in Denver, on Tuesday and Wednesday, December 28th and 29th, under the presidency of Dr. Joseph Eastman, of Indianapolis.

The New York Maternity Hospital.—Dr. Simon Marx has been appointed attending surgeon.

Changes of Address.—Dr. W. A. Heacock, to "the Nordica," One-hundred-and-thirteenth Street, New York; Dr. F. A. Sutorius, to No. 824 East One-hundred-and-sixty-first Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 24 to October 30, 1897:*

KIRKPATRICK, THOMAS J., Jr., First Lieutenant and Assistant Surgeon, is granted thirty days' extension to leave of absence.

GIRARD, ALFRED C., Major and Surgeon, is detailed as a delegate to represent the Government of the United States at the Ninth International Congress of Hygiene and Demography, to be held at Madrid, Spain, April 10 to 17, 1898.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Nineteen Days ending October 28, 1897.*

BAILHACHE, P. H., Surgeon. To represent the service at the meeting of the American Public Health Association at Philadelphia, Pa. October 26, 1897.

IRWIN, FAIRFAX, Surgeon. To represent the service at the meeting of the American Public Health Association at Philadelphia, Pa. October 26, 1897.

CARTER, H. R., Surgeon. To proceed to Montgomery, Ala., for special temporary duty. October 25, 1897.

WHITE, J. H., Passed Assistant Surgeon. To proceed to Camp Hutton, Louisiana, for duty. October 11, 1897.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending October 30, 1897:*

VAN REYPEN, W. K., Medical Director. Detached as member of Board of Inspection and Survey, and made Chief of Bureau of Medicine and Surgery.

RICHARDS, T. W., Assistant Surgeon. Detached from the Maine, ordered home to Washington, and granted two months' leave.

Society Meetings for the Coming Week:

MONDAY, *November 8th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club (annual); Norwalk, Connecticut, Medical Society (private).

TUESDAY, *November 9th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association, Medical Society of the County of Rensselaer, N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *November 10th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City Hospital; Medical Society of the County of Albany, N. Y.; Pittsfield, Massachusetts, Medical Association (private); Philadelphia County Medical Society.

THURSDAY, *November 11th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Massachusetts, Medical Club (private—annual); Pathological Society of Philadelphia; Association of the Big Four Railway Surgeons (annual, Indianapolis).

FRIDAY, *November 12th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *November 13th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Born.

HESSER.—In Iowa City, California, on Sunday, October 24th, to Dr. and Mrs. George T. Hesser, a son.

Married.

BRUSH—ENGS.—In Brooklyn, on Wednesday, October 27th, Dr. Arthur C. Brush and Miss May Engs, niece of Dr. J. H. H. Burge.

CLARKE—KNIGHT.—In New York, on Wednesday, October 27th, Dr. Walter J. Clarke and Miss Anna W. Knight.

EDDY—FREEMAN.—In Buffalo, on Tuesday, October 26th, Dr. John L. Eddy, of Olean, N. Y., and Miss Rosalie B. Freeman.

Died.

HAMEL.—In De Soto, Missouri, on Saturday, October 23d, Dr. Charles C. Hamel, formerly of Salisbury, Missouri, aged twenty-six years and seven months.

Miscellany.

On the Process of Fertilization in the Malarial Parasite.—At the meeting of the British Association held during August of the present year in Toronto, Dr. W. G. MacCallum made a report in which he described some interesting observations which he had made upon the malarial parasites of birds (*Halteridium* of Labbe). His colleague, Opie, had pointed out the occurrence of two distinct adult forms of these parasites, namely, a hyaline, non-staining form, and a form which is granular and takes on a comparatively dark stain with methylene blue. Opie had suggested that the hyaline form became flagellate; he believed that the other did not. MacCallum readily confirmed these observations, and stated positively that the hyaline forms alone became flagellate; the granular forms were extruded from the corpuscles and lay quietly as spheres among the red cells in which they had previously been contained. On watching the blood of an infected crow for from fifteen to twenty minutes, MacCallum saw motile fusiform bodies develop from these quiet spheres and wander away. The motile body is identical with the vermiculus described by Danilewsky in 1889 in his *Parasitologie comparée du sang*. A further study of the two adult forms above mentioned revealed some extremely interesting facts. The flagella which were formed on the hyaline body were seen to tear themselves free, to travel as free flagella directly toward a quiet granular sphere after leaving the body of origin, and to wriggle about it. MacCallum soon noticed that one of the free flagella plunged into the quiet sphere. After marked agitation of the pigment the body became quiet again for a period of from fifteen to twenty-five minutes, after which the vermiculus developed. Only one of the free flagella entered the sphere; the others were refused admission. The fertilized sphere, after remaining quiet for from fifteen to twenty-five minutes, put out a conical process which gradually grew larger, drawing the protoplasm into itself, until finally a fusiform body with a small pigmented appendage and refractive nucleus was formed. This is the vermiculus described by Danilewsky. The origin of the vermiculus is in every case exactly the same.

MacCallum believes, and all who have examined his preparations agree with him, that he had to deal in this observation with a sexual process. The fertilization occurs under unfavorable circumstances and is entirely comparable to analogous processes observed in many of the lower plants and animals.

He states that the vermiculus, when once formed, moves actively and has great powers of penetration by means of its pointed anterior end. It breaks up red blood-corpuscles lying in its path and may, the investigator thinks, possibly penetrate the intestinal wall and escape into the external world, inasmuch as he has observed free organisms in the mucous contents of the intestine.

He stated at the meeting of the British Association that it was not unlikely that a process of fertilization similar to that occurring in birds would be found to take place in human malarial disease.

At a meeting of the Johns Hopkins Medical Society, held on October 18th, MacCallum made a second report in which he recorded his studies of the fresh blood taken from a woman suffering from æstivo-autumnal malarial disease. A great number of crescents were present in the specimen. Only a few of the crescents in this particular case retained their crescentic shape; a few minutes after the blood was drawn they became transformed into ovoid bodies, and after the lapse of from ten to twelve minutes most of them became quite round and extra-corpuscular. After from twenty to twenty-five minutes certain of the spherical forms became flagellate; others, and especially those in which the pigment formed a definite ring and was not diffused throughout the organism, remained quiet and did not become flagellate.

The flagella were observed to break away from a flagellate form, to struggle about among the corpuscles, and finally to approach a quiet spherical form. One of the flagella was seen to enter a spherical form, the pigment of which immediately became greatly agitated. The other free flagella were refused admission, although for some time they were seen to swarm about the spherical form, beating their heads against the wall of the organism. The phenomena described occurred some thirty-five or forty minutes after the blood was drawn. Soon after the entrance of the flagellum the organism again became quiet and looked rather swollen, but no form analogous to the vermiculus was seen to develop. MacCallum believes that this process which he has observed in the malarial parasite of human beings is quite analogous to that which he had previously observed in the organism of birds. The process, so difficult to meet with in human blood, is very easy to observe in the blood of the infected crow.

These studies are of unusual interest. They will doubtless attract attention and stimulate investigators in the various countries in which malaria prevails. Besides bringing forward direct proof of the existence of a process of fertilization in the malarial parasite of birds and man, they go far to clear up the nature of the flagellate forms, about which there has been so much dispute.

The City Board of Health's Work in Bacteriological Diagnosis.—The New York board of health has issued the following circular of information regarding the Widal test for the diagnosis of typhoid fever: The investigations of Grüber, Widal, and others, published in 1896, showed that the blood of persons suffering from or having recently had typhoid fever, contained, as a rule, after the fifth day of the disease, substances which, when added to a broth culture of the typhoid bacilli, arrested the characteristic movements of these organisms and caused them to become clumped together in masses.

It has been further shown that occasionally the blood of persons suffering from other diseases possesses this peculiar property; but that when the agglutinating substances are present in these it is in relatively small amount. These substances are also occasionally present in small amount in other diseases and even in health. The reaction is, therefore, a quantitative rather than a qualitative one.

The results of a very large number of examinations made here in New York and elsewhere show that if the blood contains agglutinating substances in sufficient amount to cause a prompt and marked reaction, when one part of serum or blood solution is added to ten parts of a broth culture of the typhoid bacillus, the presence of a previous or existing typhoid infection may be considered as probable, and that if these substances are present in such an amount as promptly to produce the reaction, when one part of serum or dried blood solution is added to twenty parts of the culture, the presence of a previous or existing typhoid infection may, for diagnostic purposes, be practically considered as established.

In estimating the diagnostic value of a negative result from this test, we must remember that the reaction is rarely, if ever, present until at least four days after the appearance of symptoms, that it is occasionally absent in cases of typhoid fever until the third or fourth week, or even until convalescence is established, that when developed it may disappear after a few days, and that no definite relation between the severity of the disease and the degree and time of development of the substances causing the reaction has been established. For these reasons a single negative result in any suspected case only renders doubtful the existence of typhoid fever. In cases in which the reaction is absent after the sixth day it may be reasonably assumed that the large majority will not prove to be typhoid fever, and the absence of the reaction in all of several different cases of a suspected group, or after repeated examinations in any single case, affords evidence of very decided value in excluding the diagnosis of typhoid fever.

Either dried blood or the serum obtained from a blister may be sent for examination. The serum can be more accurately tested than the dried blood, and whenever possible, this should be furnished for test. Outfits for preparing both kinds of specimens may be obtained at any of the health department's depots.

Directions for Preparing Specimens of Blood.—The skin covering the tip of the finger is thoroughly cleansed and then pricked with a clean needle deeply enough to cause several drops of blood to exude. Two large drops are then placed on the glass slide, one near either end, and allowed to dry without being spread out on the surface of the slide. After they have dried, the slide is placed in the holder and returned in the addressed envelope to a culture station or mailed to the laboratory. The blank giving the history of the case must be filled out in full and forwarded with each specimen. The data thus obtained are for record.

Directions for Obtaining Specimens of Serum from Blisters.—The shield (designed to protect the blister from rupture) is stripped from its protecting gauze and applied to the skin somewhere on the anterior portion of the body. The piece of cantharidal plaster is then fixed within its centre. After ten to twelve hours, the shield is removed and one of the ends of the small glass tube accompanying the outfit is introduced into the blister. The tube, both ends of which should be open, should be held so that the end inserted is higher than the other, to allow the serum to run into it. After the tube has been nearly filled, it is removed and the ends are sealed by holding them a moment in a gas flame. Care must be observed not to heat the middle portion of the tube, and thus coagulate the serum. The tube so prepared is then placed in the wooden box and returned in the addressed envelope to a culture station or mailed to the laboratory. A report on the result of the examination will be mailed to the attending physician on the following day.

The board has also issued the following circular of information regarding the separation of the typhoid bacilli from the stools and urine in cases of typhoid fever for diagnostic purposes by a new method:

The examination of specimens of blood from cases of suspected typhoid fever for the Widal reaction has been of great assistance in diagnosis. Occasionally, however, the agglutinating substances do not develop in the blood at any time, or only very late in the course of the disease, or an earlier infection can not be excluded, owing to the lack of a reliable previous history. In these instances the Widal test fails to give the information desired.

Bacteriologists have long sought for a rapid and certain method of obtaining and identifying in pure culture the typhoid bacillus from the stools and urine in cases of typhoid fever, but hitherto without satisfactory results. Dr. Hiss, assistant bacteriologist to the health department, has devised a method by which it is believed it will now be possible to recover and identify the typhoid bacilli within less than forty-eight hours from specimens of fæces and urine containing them. The health department desires to thoroughly test this method and is prepared to undertake these examinations if proper specimens are furnished.

While definite knowledge is lacking as to the number of typhoid bacilli usually present in the stools of typhoid patients, and as to the time of their appearance and disappearance, it is believed that they are generally present in the discharges not only during the height of the disease but also, though to a less extent, at its commencement and for a considerable time during convalescence. The appearance of the bacilli in the urine is usually later than in the fæces. The experience thus far obtained seems to indicate that the bacilli may be obtained in about fifty per cent. of all cases on the first examination, and in about ninety per cent. after repeated examinations. The health board hopes that these examinations will prove of value not only for diagnostic purposes, but also in solving important sanitary questions relating to the presence in and time of disappearance of the bacilli from the stools during convalescence.

Physicians are requested to send specimens of intestinal discharges and urine from well-defined cases of typhoid fever and also from all doubtful cases in which the Widal test has failed to give definite information.

It must be understood that, as yet, these investigations are largely experimental, but that when the typhoid bacilli are isolated in culture an absolute diagnosis of typhoid infection is obtained.

Directions for Preparing Specimens of Fæces or Urine for Examination.—Care should be taken to send, if possible, a specimen obtained from a natural movement or one following a simple enema. No disinfectants, of course, should be employed. If the movement is formed, the portion from the part last passed, that is, the portion coming from highest up in the intestine, should be selected. In cases complicated by colitis care should be observed to avoid, if possible, the selection of a specimen composed largely of mucus.

The specimen is collected by seizing a small portion of the discharge between the two slips of wood accompanying the outfit and placing this in a bottle. The top of the bottle is replaced and the specimen returned to a culture station or to the laboratory.

Specimens of urine should be received directly into the bottle accompanying the outfit, or should be collected in an absolutely clean vessel and immediately transferred to this bottle, which is then returned to a culture station or to the laboratory.

The necessary outfits, with directions and blanks, may be obtained at the various health department depots where diphtheria culture tubes, antitoxine, and other products are supplied. The following blank should be fully filled out in every case:

Date.......................... Time............
Name of patient......................... Age......
Address ....Occ..........
Attending physician...............................
Address ....
Clinical diagnosis................................
Duration of illness...............................
Is movement due to cathartic or enema?............
If so, what kind?.................................
Has patient previously had typhoid fever?..........
If so, how long ago?..............................
If typhoid fever, where contracted?...............
Has patient been outside of New York city during the month previous to present illness?.............
If so, where?.....................................

The Quebec Board of Health's Work in the Agglutination Diagnosis of Typhoid Fever.—Circular No. 4 of the laboratory of the board of health of the Province of Quebec, dated Montreal, October 1, 1897, addressed to the president of the board, by Dr. Wyatt Johnson, bacteriologist to the board, says: "The simple technique recommended by this laboratory for the serum diagnosis of typhoid by means of dried blood has been found, after a year's trial, quite satisfactory for the practical work of diagnosis.

"At the same time (as was recently explained by a committee of the American Medical Association, of which I was a member), although for routine diagnostic work even the very simplest methods may give good practical results, yet for recording scientific observations quantitative methods should be selected. This is especially necessary in reporting exceptional cases at variance with the general results of others, or where the observations are made the basis of generalizations.

"I have found that good uniform quantitative results can be readily obtained with the dry-blood method by taking in the first instance drops of uniform size, collected by means of a wire loop (I use 20 gauge copper wire, 2 mm. inside diameter), which is returned with the outfit and used subsequently to obtain dilutions of known strength. The method has been described more fully in a joint paper by myself and Dr. Harold Thomas before the British Medical Association at Montreal, on September 2, 1897.

"For quantitative work, the blood is dried on an ordinary glass slide, or non-absorbent paper can be used if preferred. One of the outfits will be sent when a quantitative estimation is desired, or to any who are practically interested in the matter. As already stated, I do not find quantitative work necessary for routine diagnosis, preferring to employ cultures having a sensitiveness so low as to give no reaction at all with non-typhoid blood.

"In addition to the previous observations made by myself and Dr. D. D. McTaggart as to the use of attenuated cultures, I wish further to call attention to the importance of paying special care to the reaction of the test-culture media. Bouillon cultures showing after twenty-four hours' growth of typhoid, at 37° C., a slight uniform cloudiness only, and quite free from scum or sediment, offer the greatest security against pseudo-reactions. I find that such cultures can be obtained by using bouillon just on the verge of litmus acidity, giving no blue whatever to the red paper. From five per cent. to six per cent. of normal alkali is required to make this bouillon neutral to phenol phthalein.

"Cultures which give a heavy bouillon growth are the ones which are most liable to give pseudo-reactions—*i. e.*, to clump in a deceptive manner spontaneously or with non-typhoid blood. If the culture is too acid the reaction may be defective. With a proper culture, I have never met with the typical reaction apart from typhoid fever. On the other hand, by employing certain incorrect methods of preparing the culture I can obtain at will very perplexing pseudo-reactions with a large proportion of non-typhoid bloods. This may be the explanation of a number of anomalous published results, though the difficulties can be also doubtless avoided by other means than those indicated here."

Some Aspects of the Doctrine of Self-intoxication were treated by Dr. Christian A. Herter, of New York, at a meeting of the Cleveland Medical Society, held on October 8th. Dr. Herter's address appears in the October number of the *Cleveland Journal of Medicine*. During the past ten years, says Dr. Herter, attention has repeatedly been drawn to the doctrine of self-poisoning as the explanation of certain clinical manifestations of disease. According to the advocates of this doctrine, which is, in fact, a revival of the old humoral theory of disease, based upon more or less valid experimental evidence, the human organism may be poisoned by the products of its own digestive or metabolic processes. These products consist either of substances which are normally found in the body, but accumulate in excess, or of substances which are not known to occur normally in the organism. In the former class may be placed the products of excessive putrefactive decomposition in the intestine, such as indol, phenol, etc., and also the accumulation of bile salts in the blood which occurs in every acute obstructive jaundice. In the latter class we may presumably place the sulphureted hydrogen of hydrothionæmia, the oxybutyric acid of diabetes, and the diamines of cystinuria.

Some would-be upholders of this autogenous theory of disease, including several prominent French authors, he continues, seem to have been devoid of the critical faculty when confidently placing certain derangements in the category of self-intoxications upon evidence of the most unsatisfactory character. Probably the weight which these authors have attached to the results obtained by the physiological study of the toxic properties of the urine is more to blame than any other influence for the conclusions which they have so unhesitatingly formulated.

The author undertakes to indicate what criteria we should employ in testing its truth and what ideas we may safely cling to when the theory has been shorn of its extravagances.

In order to demonstrate that a particular disease is caused by a definite poison, says Dr. Herter, it would be necessary, first, to find that poison regularly in the blood or organs of the subjects of the disease, and, secondly, to show that the poison, when introduced into the circulation of men or animals, is capable of reproducing the chief features of the disease. Such evidence would be comparable to the evidence which stamps a disease as being an infectious one. With a very small number of exceptions—which include, for example, the dependence of some of the constitutional symptoms of acute obstructive jaundice upon the bile salts which accumulate in the blood—this kind of evidence is wanting for the establishment of the autogenous diseases. But if we make the standard a little less rigorous; if we admit the presence of a poison in the urine as evidence that this poison exists in the blood (which we may safely do in some cases), a certain number of pathological conditions will conform to the requirements. Thus, in hydrothionæmia, to take a simple illustration, it is known that sulphureted hydrogen is produced in the intestine in considerable amount, that it appears in the urine, and that when sulphureted hydrogen is introduced into the blood of animals symptoms result which resemble those of hydrothionæmia. It would be more satisfactory to obtain the sulphureted hydrogen directly from the blood in such cases, but, notwithstanding this shortcoming, the probability that the symptoms of the condition known as hydrothionæmia depend on the presence of sulphureted hydrogen in the blood amounts to a practical certainty. In general, it may be said that the evidence of the existence of most of the conditions which we call self-intoxications is on quite a different plane from that on which is based the dependence of the infectious diseases on pathogenic micro-organisms. In the latter case the evidence amounts to proof; in the former it is generally a question of probability, which is sometimes high, sometimes low.

The facts on which we have to rely when placing a group of symptoms in the list of autogenic diseases are obtained mainly from two sources, experimental physiology and physiological or pathological chemistry. Experimental physiology has been appealed to in several ways. One of these is by the extirpation of various glandular organs. The glycosuria which follows extirpation of the pancreas, the fall in blood-pressure, and the muscular debility which succeed the removal of the suprarenals, the cachexia which follows extirpation of the thyreoid, the immensely increased excretion of ammonia which follows the exclusion of the liver from the portal circulation by means of the Eck fistula, the accumulation of toxic materials in the blood which occurs after double nephrectomy—all these are facts of the first importance for the comprehension of the autogenous diseases which are found in men. Although the study of the effects of the injections of extracts of glandular organs has not yielded the results which were predicted by Brown-Séquard and his pupils, it has thrown light on the nature of myxœdema by the study of the thyreoid extract, and by the discovery by Oliver and Shäfer and others of the blood-pressure-raising property of extracts of the suprarenal bodies, it has yielded valuable information as to the nature of Addison's disease. The results of extirpation of the suprarenals are complementary to those obtained by injections of suprarenal extract, and leave little room for doubt that the adrenals furnish the organism with an internal secretion which is essential to it, or possess the power of transforming a substance which is injurious to it.

Two other experimental methods, similar in some respects, yet very different in their scope, have been employed in the investigation of conditions suspected of being self-intoxications. These are the intravenous infusions into animals of human blood-serum and of human urine. It is contended that if the organism is indeed suffering from an intoxication, there should be evidence of the poison in the blood and even in the urine, and we should expect to reproduce in animals some of the symptoms of the pathological condition, or at least be able to determine whether the serum or the urine is more toxic than in health. Taking, first, the case of the blood-serum, we find that there is a serious practical obstacle to the application of this method, the difficulty which is encountered in obtaining blood from living subjects in sufficient amount. There are also difficulties in the way of a correct interpretation of results. For instance, it is doubtful whether a rabbit, the animal generally used for blood-serum infusions, possesses the requisite means of expression for the reproduction of even the grosser symptoms of an intoxication. Time will probably show that, for the study of certain states at least, animals are required which possess much more highly organized nervous systems. Even the mere determination of the fatally toxic dose of a human serum is a matter of no little difficulty in the case of rabbits, because even the normal alien human serum, owing partly to its power of inducing coagulation, possesses a considerable degree of toxicity. Then it is necessary to observe much care as regards temperature, rate of infusion, contamination by micro-organisms, exposure to light, etc.

As yet, infusions of blood-serum have been made mainly in the case of the intoxications of infectious diseases, but some studies have been made of the blood in uræmic states which are of considerable interest. Thus Tarnier and Chambrelent, Ludwig and Savor and Volhard have investigated puerperal eclampsia, Hughes and Carter have studied some of the common types of uræmia, and the author has recently made a number of observations which indicate that cases of uræmia characterized by convulsive seizures are probably always associated with an increase in the toxicity of the blood.

There is at present a controversy as to whether the serum of elamptic women is or is not more toxic to animals than is normal. The decision of this question is complicated by the possibility that the blood of pregnant women at term is more toxic to animals than the blood of the nonparturient state, owing, perhaps, to its containing a greater amount of fibrin ferment. It will require a considerable number of controlled observations to settle this point definitely, Dr. Herter thinks. So far as personal observations on the blood of three eclamptic women entitle him to form a judgment, he strongly inclines to the view that eclamptic blood is much more toxic to animals than normal blood. Recently Lambert and Van Gieson infused into rabbits the serums obtained from several victims of sunstroke. The results, though based on too few cases to render them conclusive, give support to the view that an autotoxæmia is a feature of sunstroke.

Notwithstanding the difficulties that attend this method of investigation, Dr. Herter thinks we may confidently expect it to yield results of the highest importance when its application is extended. Of course, he says, negative results from serum infusions do not necessarily exclude the possibility that the serum contains toxic materials. On the other hand, positive results do not point to a self-intoxication unless it is clear that the toxæmia is not the concomitant of an infectious disease.

Dr. Herter then points out some of the fallacies of experimental infusion of urine and some of the difficulties met with by the chemical investigator.

A self-intoxication, he then goes on to say, may arise either from poisonous substances that result from digestion or from the activity of micro-organisms which normally inhabit the gastro-enteric tract, or from substances that are the product of the activity of one or more kinds of cells belonging to the body. In other words, we may divide the self-intoxication into two groups, intestinal and metabolic. A sharp separation of these groups is probably not philosophical, for the metabolic intoxications are influenced in very important though sometimes obscure ways by the occurrence of intestinal self-intoxications. It is useful, however, to make a separation of these types.

In the group of intestinal self-intoxications, says Dr. Herter, must be included conditions that arise from the absorption of either toxic substances elaborated through the influence of the unorganized digestive ferments or toxic substances due, at least in part, to the action of micro-organisms which normally inhabit the intestine. There is little doubt, he thinks, that the great majority of autogenous diseases belong in the latter class. It is necessary, he says, to distinguish cases of this latter sort carefully from the very closely allied class of cases in which an intoxication of the organism arises from the absorption by way of the intestine of toxic materials produced by bacteria which are foreign to the intestine and have been brought into it from without. In such a case one has also to deal with an intestinal intoxication, but not with a self-intoxication. Cases of this sort are examples of intestinal infection, and should strictly be classed with the infectious diseases, though clinically they may have much in common with intestinal self-intoxications. It is true, says Dr. Herter, that at present we frequently can not say whether the bacteria producing an intoxication are of a kind normally living in the intestine or of a foreign type, but he thoroughly favors making a distinction between these two groups of cases, in spite of our present imperfections in knowledge. Without such a distinction, he says, we should be compelled to class typhoid fever with the common digestive disturbances that result from the excessive activity of the yeast-plant or of the common colon bacillus in the digestive tube. Some writers would probably object to including any of the intestinal intoxications of bacterial origin with the self-intoxications, preferring to limit the term to metabolic derangements, but it seems to him that there are good clinical and pathological reasons for maintaining the proposed classification.

He then sketches some features of the pathological processes that are involved in autogenous diseases, especially those of intestinal origin, without attempting to discuss the present state of our knowledge of individual diseases systematically. Beginning with the processes that occur in the gastro-enteric tract, it is important, he says, to distinguish the occurrences that are known to take place, normally and pathologically, in different types of food.

As regards the fats, there is not very much to be said bearing on the subject in hand. The fats taken as food are chiefly neutral fats, and undergo emulsification preparatory to absorption. A portion of the neutral fat is absorbed as such, and another portion is split by the action of the fat-splitting ferment of the pancreatic juice into glycerin and fatty acids corresponding to the fat introduced. In health it seems to make little difference whether the fat is absorbed as neutral fat, as a soap, or as a fatty acid. The fatty acids, directly after absorption, are either converted into neutral fat by synthesis with glycerin supplied by the organism, or oxidized in the organism and broken down ultimately into water and carbon dioxide. There is reason to think that in health this synthetic action and this oxidation are performed as usual even when large quantities of fat are eaten. In acute or chronic catarrhal enteritis there is evidence that the oxidation of the fatty acids in the organism may be imperfect. It is probable that in these cases the greater portion of the neutral fat introduced is decomposed into fatty acids through the increased activity of micro-organisms. As a result of this increased formation of fatty acids, together with the diminished oxidation just mentioned, and perhaps, also, owing to defective synthesis with glycerin, it happens that the organism may be overwhelmed with fatty acids.

What means have we, asks Dr. Herter, of determining whether the organism is suffering from an excessive accumulation of acid compounds within it? A study of the elimination of ammonium by the urine, he says, gives us important and reliable information in relation to this question. Normally a certain portion of the nitrogen of the urine is excreted as an ammonium compound, the proportion varying from two to five per cent. Now, ammonium is constantly being brought to the liver in the portal blood for the synthesis into urea which goes on there constantly, besides being constantly formed by the catabolism of proteids. Thus it is that when the blood becomes overloaded with fatty or other organic acids, the acids seize upon this ammonium as the most available base to form an ammonium compound, and thus increase the proportion of nitrogen, of ammonia in the urine, according to the quantity of acid to be neutralized, the percentage sometimes reaching many times the normal. Although we do not know the full significance of this interesting process of neutralization, it is clear, says Dr. Herter, that it is a most important means of ridding the body of the ill effects of the excessive accumulation of organic acids.

There are thus reasons for thinking that the fats, which have commonly been regarded as harmless, may intoxicate the organism through the fatty acids derived from them, in catarrhal derangements of the intestine. As yet, says Dr. Herter, we are unable to separate the symptoms due to this cause from symptoms due to associated pathological conditions.

The sugars and starches which are ingested, he says, probably play a more important rôle in the production of intestinal self-intoxications than the fats do. The soluble carbohydrates, such as the sugars, may undergo some absorption from the stomach, but the insoluble forms, such as starch and cellulose, must first be converted into dextrin or sugar by the action of the enzymes of the saliva and pancreatic juice. In the intestine a portion of the soluble carbohydrate material is absorbed as such; the rest is broken down by the action of organized ferments, so that no soluble carbohydrate material appears in the fæces. The proportion of soluble carbohydrates thus absorbed or decomposed varies considerably within the limits of health, but there can be no doubt that the process of decomposition may be so active as to constitute a pathological condition. This ready decomposition of carbohydrates under the action of micro-organisms constitutes fermentation. The process may or may not be accompanied by the formation of gas. Although the word fermentation has been employed in somewhat different senses, it is desirable, Dr. Herter thinks, in discussing the processes that go on in the gastro-enteric tract as the result of the action of micro-organisms, to restrict it to the decomposition of carbohydrates and fats. The term putrefaction, on the other hand, he says, should be reserved for the decomposition of proteids and their derivatives under the influence of micro-organisms, the difference in the nature of the products in the two cases being the chief warrant for this somewhat arbitrary distinction.

Different types of fermentation occur in the stomach as the result of the presence of the different micro-organisms so commonly found there. Thus, the yeast-plant's activity in the presence of sugar gives rise to alcohol and carbon dioxide, and, what is important, is capable of acting in the presence even of a superacid gastric juice, if sodium chloride is present. The lactic-acid bacillus splits the carbohydrate molecule, and lactic acid is produced. The *Bacterium aceticum* possesses the faculty of oxidizing alcohol into acetic acid, but oftener this acid is formed by the direct splitting of the carbohydrate molecule. Besides alcohol, carbon dioxide, and lactic and acetic acids, the fermentation of carbohydrates may yield butyric and propionic acids, free hydrogen, and marsh gas. Among the conditions that favor the fermentation of carbohydrates are a low proportion of free hydrochloric acid in the gastric juice, the presence of large numbers of fermentative micro-organisms, an excess of carbohydrate food, atony and dilatation of the stomach, and conditions in which absorption is slow, such as chronic gastritis and some nervous states. One important result of excessive fermentation is that a large proportion of the potential energy supplied by the carbohydrates may be lost; that is, the potential energy of the food is utilized by the micro-organisms, and not by the individual. If this loss is extreme the nutrition of the body is impaired and considerable weight may be lost.

Another important result of excessive fermentation, says Dr. Herter, is the absorption of alcohol, fatty acids, and lactic acid from the intestine. Large quantities of the fatty acids are capable of inducing diarrhœa and perhaps slight catarrhal enteritis. It is not uncommon in practice to meet with diarrhœal seizures from this cause. We know nothing definite of the effects of individual members of the fatty-acid series, Dr. Herter continues, but he says there is no doubt that their absorption in excessive amounts leads to an acid intoxication of the organism which gives rise to an excessive excretion of ammonium by the urine. In what way this intoxication expresses itself in the symptoms of disease is not yet known. Clinical observation certainly indicates that carbohydrate dyspepsia, of which the essential feature is excessive fermentation, is often associated with unusual torpor and drowsiness after meals, which may perhaps be due to the absorption of fatty acids in excess or to the absorption of ethyl alcohol. He says he has known peevishness, irritability of the bladder, and excessively acid urine to be associated with an increased output of the nitrogen of ammonia, indicating the neutralization of abnormally large quantities of acid compounds, and he has known these symptoms disappear as the ammonium excretion has returned to the normal. In the dyspepsia of carbohydrates both the urine and the fæces are apt to be more acid than normal. He has noted the fact that in pigs fed on large amounts of brown sugar the previously neutral urine and fæces became strongly acid and remained so while the sugar was being administered. The animals excreted an excess of the nitrogen of ammonium and drowsiness was a marked and persistent feature. This drowsiness was also noted in a pig to which large doses of acetic acid were administered. Dr. Herter thinks it probable that in practice we often do good when we reduce the carbohydrate food of certain dyspeptic patients by reducing an acid self-intoxication of intestinal origin. The unquestionable value of diastase, and especially taka-diastase, for individuals who do not utilize their starches, probably depends, he says, on the rapid conversion of insoluble carbohydrates into a soluble form and their absorption before fermentation reaches an advanced stage.

Although the fats and carbohydrates thus play a part in the production of self-intoxications, it is the proteid food stuffs, Dr. Herter thinks, that oftenest seriously derange the processes of health. In health the greater portion of the ingested proteid food is prepared for absorption by conversion in the stomach, first into acid-albumin (in the intestine into alakli-albumin) or an allied proteid, next into albumoses, and finally into peptone. The absorbed peptone has been shown to be rapidly converted in large part in the wall of the intestine into serum-albumin, so that peptone does not occur in the blood in health except in small amount. We do not know the effect of introducing considerable quantities of peptone into the human circulation. The experiments of Schmidt-Mülheim, Solomon, and others showed that the infusion into the blood of dogs of considerable quantities of Witte's peptone, which consists chiefly of albumoses, produced great prostration, lowering of blood pressure, and narcosis. We certainly can not look upon the entrance of considerable amounts of albumoses into the human circulation as an indifferent occurrence, but what symptoms may be thus produced is unsettled. Dr. Herter says he has known the subcutaneous injection of a large amount of Witte's peptone in a dog to be followed by a marked increase in the excretion of uric acid.

In the course of pancreatic digestion, in addition to the production of albumoses and peptone, lysin, lysatinin, leucine, tyrosine, ammonia, etc., are found. Under the influence of bacteria the same substances are formed that result from pancreatic digestion, but in addition to these there arise a number of products of further decomposition. Among these products of the further splitting of the proteid molecule are indol, skatol, paracresol, phenol, phenylacetic acid, methyl mercaptan, sulphureted hydrogen, etc. According to the observations of Macfadyn, Nencki, and Sieber, these putrefactive products arise mainly in the large intestine. Even in health a certain amount of absorption goes on, some of these putrefactive products finding their way into the urine unchanged, while others first undergo conjugation with sulphuric acid, perhaps in the liver, to be eliminated by the urine as ethereal sulphates. The ethereal sulphates are a rough measure of the extent of the putrefactive process, and constitute certainly the best single indication which we possess. Although this putrefaction of proteids occurs in health, it often reaches a degree which must be regarded as pathological. Leaving aside the influence of diet and drugs, a marked increase in the ethereal sulphates is generally associated with derangements of the nervous system, and especially, in Dr. Herter's experience, with mental depression. In melancholia, it is the exception for the ethereal sulphates not to be considerably increased. In some persons headaches, irritability, anæmia, etc., are apparently associated with excessive proteid putrefaction in the intestine. Chronic constipation is a common cause of excessive intestinal putrefaction, and the nervous symptoms which characterize this condition are probably attributable largely to the absorption of the products of proteid decomposition.

One product of putrefaction, says Dr. Herter, has been studied more carefully in its clinical relations than the others, owing to the readiness with which its derivative in the urine can be detected. This is indol, which, after oxidation and conjugation, appears in the urine as indoxy-potassium sulphate, and is readily oxidized into indican or indigo blue. His own experiments show that the common colon bacillus, which is well known to be a producer of indol, is a very important source of the indican of the urine. It seems in the highest degree probable, he says, that conditions which permit of the active growth of the colon bacillus lead to the excessive formation and absorption of indol and the consequent appearance of an excessive quantity of indican in the urine. Normally the amount of indican in the urine is small, but in disease it may become greatly increased. The increase is most striking in mechanical obstruction of the gut, but a great increase is often observed in catarrhal enteritis and in errors of diet consisting of the excessive use of proteid food. We can not state, he adds, whether the absorption of indol gives rise to specific symptoms. Sometimes the pathological increase coincides with the appearance of urticaria, sometimes with depression and headache, and sometimes with *grand-mal* seizures of epilepsy. The great difficulty in establishing a relationship between such a product of putrefaction as indol and a definite class of symptoms is that we necessarily fail to take into account other pathological factors which may be present. But Dr. Herter believes we shall get at the nature of the toxic effects of indol by experimental means. It has been alleged, he says, that the presence of indican in the urine of young children is an indication of tuberculosis, but this contention is quite without foundation.

Although we have so little positive information about the relation between different putrefactive products and specific clinical symptoms, there is no room for doubt, says Dr. Herter, that the excessive absorption of such products is responsible for many of the disturbances of nutrition, with their attendant functional derangements of the nervous system, with which we are constantly meeting in practice. The character of the symptoms must be dependent chiefly on the quantity and nature of the absorbed products and upon that very important and variable factor, the individual susceptibility of the nervous system. It seems to him not improbable that an intoxication which in one individual causes little derangement of nervous function may in another individual, possessing what, in our ignorance, we call an unstable nervous system, give rise to or determine an eclamptic or epileptoid seizure, or an onset of tetany, or perhaps a paroxysm of migraine. As regards epilepsy, he inclines to the belief that it sometimes happens that infantile convulsions arising originally from an intestinal self-intoxication are the immediate precursors of a long series of occasional convulsive seizures to which one can not give any other name than epilepsy. It is exceedingly difficult and sometimes impossible to distinguish in certain cases the action of local irritants operating on a reflex arc from the action of a poison which has found its way into the blood.

For example, when a series of convulsions in a child succeeds upon the ingestion of a large quantity of uncooked apple, there is little doubt that the local irritant in the intestine is quite as much or more concerned with the symptoms than any absorption of toxic materials. How far this reflex element may enter into the causation of epileptoid seizures or the seizures of tetany we have as yet no means of determining. The importance of this reflex element in certain cases is mentioned, says Dr. Herter, because there has been an unfortunate tendency in some quarters to ignore and replace it by self-intoxications of doubtful existence.

There are certain rare but interesting types of intestinal putrefaction which require a passing notice, Dr. Herter continues. One of these is the hydrothionæmia which is characterized clinically by symptoms resembling poisoning from inhalation of sulphureted hydrogen—namely, headache, giddiness, delirium, exaltation, sopor, collapse, etc. Both sulphureted hydrogen and ammonia have been found in the urine in such cases during several days.

Cases of cystinuria are generally characterized by chronic disturbances of digestion and by the persistence of cystine in the urine, even on a rigid milk diet. Associated with the cystine in the urine are the alkaloidal bodies putrescine and cadaverine which are probably formed in the intestine as the result of a specific type of putrefaction. If it should prove true that cystinuria depends on the presence of a bacterial form which does not occur normally in the intestine, it would be necessary to class the disease as an intestinal infection rather than with the self-intoxications.

Several important influences habitually operate to minimize or hold in check the putrefactive processes in the intestine, says Dr. Herter. Thus, the hydrochloric acid of the gastric juice is unfavorable to the growth of the colon bacillus and other putrefactive agents, although there is not that close complementary relation between the acidity of the gastric juice and the putrefactive products recognizable in the urine which has been alleged by some writers. The bile, by its bile acids, probably exerts an influence in the same direction, but much less distinctly. Perhaps a more important influence is exerted by the bile in hurrying along the contents of the small intestine and thus reducing the opportunity for the absorption of putrefactive products. A much more effective agent in the control of putrefaction is the fermentative decomposition of carbohydrate food which is habitually operative in persons on a mixed diet. Since Hirschler called attention to the fact that cane sugar, starch, dextrin, etc., exerted an influence of this character, the evidence for this view has considerably increased. It is likely that organic acids arising from carbohydrate fermentation, such as lactic and acetic acids, may fully compensate in this respect for a great reduction in the quantity of hydrochloric acid in the gastric juice. Dr. Herter has obtained experimental evidence that in dogs the introduction of considerable numbers of the lactic-acid bacillus into the stomach or intestine is capable of decidedly reducing the production of indican.

An extremely important factor in relation to the self-intoxications generally is the ability of the organism to neutralize, in part at least, poisons that are absorbed from the gut or that arise in the course of metabolism. Although exact knowledge in regard to the manner in which this neutralization occurs is scanty, there is substantial evidence that the liver, which is peculiarly exposed to the poisons which are absorbed from the intestine, is also especially adapted to modify their toxic properties. It is a mistake to think of the liver as the sole seat of such neutralizations, which are accomplished by cell-activities many of which are common to many different kinds of cells. The oxidation of the organic acids, the synthesis of ammonium and carbon dioxide in the formation of urea, and the conjugation of phenol with sulphuric acid are instances of transformations which result in the production of bodies of relatively slight toxic properties.

Another subject of great interest in connection with the subject of self-intoxication, says Dr. Herter, is the influence of poisons on the formation and excretion of uric acid and the xanthine bases. It is a significant fact that most acute and most chronic derangements of intestinal digestion are associated with an increased excretion of uric acid by the urine. Such an increase may also occur in the course of infectious diseases, after the use of drugs, such as considerable doses of sodium salicylate or piperazine, and when considerable doses of alcohol have been taken. It is his belief, based on the study of the uric acid in three thousand collections of urine, that the increased excretion of uric acid under these circumstances depends on the action of toxic substances upon the organism. Now, the suggestive researches of Horbaczewski show that uric acid, xanthine, and hypoxanthine may be readily derived from the nucleinic acid which forms so essential and characteristic a part of the chromatin of the nuclei of animal cells, and it is an accepted view among physiological chemists that the uric acid of the urine is ultimately derived from this nucleinic acid by means of certain metabolic processes. It seems in a high degree probable, Dr. Herter thinks, that in conditions where we find a pathological increase in the excretion of uric acid this is to be regarded as evidence of increased destructive metabolism in the nuclei of the cells of the organism, which is perhaps the expression of a chemical reaction between the constituents of the nuclei and certain poisons. It is noticeable that this conception of the meaning of increased formation and excretion of uric acid is not at all in accord with the current idea that uric acid is a poison which, circulating in the blood, is capable of producing the gravest and most diverse forms of disease—epilepsy, gout, uræmia, hæmoglobinuria, etc. The view that uric acid is a terminal product of metabolism, and not itself a poison, harmonizes with many biological and chemical facts, and corresponds with the results of sober clinical investigation, while the idea that uric acid is an active poison is mainly the product of the *a priori* method of reasoning.

It is the author's conviction that in the treatment of these conditions we rely far too much upon drugs, that we place our faith too much in intestinal antiseptics, in drugs that quiet the nervous system, and in prepared digestive ferments, and that we do not sufficiently insist upon hygienic means. It is important, he says, in every case in which one suspects a toxic element of intestinal origin to make an effort to determine whether the symptoms are most influenced by the fats, the carbohydrates, or the proteids. If the fats or carbohydrates seem at fault we can safely dispense with them for a time in an acute case, or reduce them in a chronic case. But we are seldom justified in shutting out proteid food, and it becomes necessary to give such food in the least objectionable form. Usually this form of proteid food is milk, which has at least two important effects upon the organism which have not received the attention they deserve. One of these is its effect in reducing the excretion of uric acid, the other its influence in diminishing the ethereal sulphates, which, as already stated, afford an index of the degree of proteid putrefaction in the gut. Probably no other form of proteid food is so adapted for the treatment of intestinal self-intoxications in general, though there are exceptional cases in which the decomposition of casein gives rise to extremely grave toxic symptoms. In the treatment of headache we use acetanilide, antipyrine, and phenacetine much too freely, and are too apt to overlook the gastritis or the intestinal dyspepsia which is its basis, when lavage of the stomach or the use of cathartics may be much more rational treatment. In the treatment of irritability, nervousness, and insomnia we can largely replace sedative drugs by hydrotherapy, although we can not wholly dispense with them. The use of intestinal antiseptics, especially sodium salicylate and β-naphthol, may be a valuable auxiliary in checking excessive intestinal putrefaction, but should never be the mainstay of treatment. In short, it is of primary importance for the successful treatment of the self-intoxications, and the catarrhal states of the gastro-enteric tract with which they are generally associated, to take account of the habits of the patient, not only as regards food and drink, but also as regards exercise, fatigue, sexual excitement, and the general moral atmosphere in which he lives. This is not always a pleasant task for the physician, for it is apt to require prolonged self-denial on the part of the patient to modify his habits to accord with the true biological requirements, which are often severe. It is so much simpler to give drugs which temporarily relieve symptoms than to remove the injurious practices which cause these symptoms that we often add a drug intoxication to the self-intoxication which we are called upon to treat.

There is yet so little positive information regarding the chemical nature of self-intoxications which we may class as being of metabolic origin that Dr. Herter refers very briefly to this aspect of his theme, though, he says, it is second to none in pathological interest. Taking diabetes as a type of this class, it may be said that diabetes may occur without recognizable pancreatic disease, that extensive pancreatic disease may occur without diabetes, and that in a certain number of cases diabetes is associated with advanced atrophic changes in the pancreas. Where diabetes and pancreatic disease occur together we must assume that the glycosuria depends on an actual diminution of the internal secretion of the gland. Where there is diabetes without pancreatic disease, we have to assume that there is an accumulation of sugar in the body, owing to the transforming power of the pancreas being inadequate, though perhaps considerable. Where there is extensive pancreatic disease without glycosuria, we have an apparent contradiction of the pancreatic origin of diabetes unless we transfer to man the fact noted in dogs, that glycosuria *may* fail to appear when as little as one fifth or even one ninth (Sandmeyer) of the pancreas remains. It may be regarded as questionable whether a disease which, like diabetes, is thus apparently dependent on the suppression of an internal secretion is properly to be classed as a self-intoxication. The facts regarding diabetic coma, however, strongly point to a dependence of the symptoms upon such an intoxication. There is no doubt that we must regard a marked diminution in the alkalinity of the blood as a regular feature of this coma. Whether this diminished alkalinity is due to the presence of β-oxybutyric acid is uncertain, but it is likely that it is so, in part at least. Oxybutyric acid not only is constantly present in the urine in diabetic coma, but if present in considerable amounts may safely be regarded as the portent of impending stupor. This oxy-acid is to be looked upon as the regular concomitant and precursor of diabetic coma, but not necessarily its cause. Acetone and acetoacetic acid stand in a very different relation to diabetic coma, and their presence in the urine can hardly be taken as positive evidence of an intoxication. Acetone is often found in considerable amount for a long period without the development of coma. Recent studies indicate that its presence is chiefly the expression of an active metabolism in the fats of the body, and that its occurrence in the urine is intimately connected with the nature of the ingested food. But even if we leave acetone and acetoacetic acid aside, we have in the facts regarding the reduced alkalinity of the blood and the excretion of oxybutyric acid incontestable evidence of an intoxication in the stage of diabetes characterized by coma.

Whether we are justified in classing exophthalmic goître with the self-intoxications remains to be shown. As pointed out by Greenfield, the thyreoid parenchyma in this disease is the seat of a characteristic papillary overgrowth in which the epithelial cells take on a distinctly columnar type. These alterations are indeed most striking, and, together with the similar changes found by Halsted and others in compensatory hyperplasia of the thyreoid after removal of large portions of the gland, strongly support the view that there is increased secretory activity in this disease. Chemical evidence of an intoxication is still wanting, but in this, as in other diseases due to pathological modifications of internal secretions, we may confidently look to future investigations to give us indications of the chemical nature of the process concerned.

Dr. Herter refers to an important and common pathological state, the group of conditions which we class as uræmia. There are few subjects, he says, upon which speculation has so outrun the facts. Of the many theories which have had their vogue, some, like the urea theory, the potassium-salts theory, the cerebral-œdema theory, and the vascular-tension theory, have not been without a certain justification; others, on the contrary, like the current theory of Bouchard, have had little basis beside a certain plausibility due to the misinterpretation of loose experiments. According to the Bouchard theory the urine contains a number of poisons which differ in their action—a coma-producing poison, a convulsive poison, a pupil-contracting poison, etc. Uræmia depends on the retention of these substances in the blood in varying proportion. Thus, if the coma-producing substance is in excess uræmic coma is supposed to result, but if the convulsive poison preponderates the convulsive type of uræmia is produced. This doctrine, which involves the unwarranted transfer to man of the results of intravenous infusions of urine in rabbits, is quite inadequate to explain the majority of the cases which clinicians have agreed to call uræmia. It quite fails to explain why a non-nephritic man whose ureters are blocked by calculi may live more than a week without secreting urine and without showing any of the typical symptoms of uræmia, while, on the other hand, a patient with small granular kidneys may rapidly grow comatose and have convulsions and fever, when the urine is little or not at all reduced.

Dr. Herter's view upon this subject is to the effect that we habitually include at least two distinct pathological states as uræmia. One of these occurs in the course of chronic nephritis and manifests itself clinically by dyspnœa, high-tension pulse, digestive derangements, jerkings of the muscles, and perhaps finally convulsions. These cases run a non-febrile course, and appear to be due to a toxæmia of which the basis is very probably a toxic proteid. On the other hand, there is a class of cases in which a patient with previously healthy kidneys has a severe acute nephritis with fever, suppression of urine, and grave cerebral symptoms, especially delirium and coma. The evidence which we now possess speaks strongly, indeed all but conclusively, for the view that these cerebral symptoms, which clinicians class as uræmic, have the same ætiology as the acute nephritis—*i. e.*, are of infectious origin. In other cases, and these are common, an acute infection is superposed on the chronic toxæmia. The chronic toxæmia, though influenced in important ways, according to his belief, by the character of the bacterial activity in the intestine, is probably independent of the direct influence of the ordinary pathogenic micro-organisms, and is to be regarded as the result of an obscure derangement in metabolism. This toxæmia may be provisionally grouped with the self-intoxications, and must be distinguished from the acute uræmias of infectious origin. The exceptional cases in which uræmia is due to mechanical obstruction of the ureters may be classed with the self-intoxications on grounds similar to those which lead us to include cases of jaundice from impacted gallstones in the same category. Such uræmic patients often have grave terminal symptoms, such as convulsions or delirium, but it is not clear, Dr. Herter thinks, that these symptoms are solely due to the retention or reabsorption of urinary constituents.

Uræmic convulsions and coma not rarely occur when the blood contains only a normal proportion of urea, says Dr. Herter, and in the cases of nephritis which show the largest excess of urea in the blood obtrusive cerebral symptoms are often absent. This is not equivalent to saying that urea under no circumstances acts as a poison, but it shows that it ordinarily plays no important rôle in the causation of the grave cerebral symptoms of uræmia.

It is certain, says Dr. Herter, in conclusion, that medicine is destined to be enriched with most important discoveries regarding the chemical basis of various intoxications when chemistry and pathology, which have so long stood apart from one another, are brought into that close union which may safely be prophesied. Such additions to our knowledge will be welcomed by physicians as well as investigators, for the rational treatment of many of our patients is coming more and more to be based on such knowledge. But our progress in this direction is certain to be slow and laborious, and bound up with many errors and disappointments, for there are few kinds of research that offer more opportunity for achievement on the one hand, and for serious error on the other, than pathological chemistry. The thoroughly trained, well-balanced general practitioner has many opportunities to serve the science of medicine by putting the theories of investigators to the severe test of clinical experience. Those of us who are interested in adding to our actual knowledge of the self-intoxications will do well to keep before us the golden rule of scientific inquiry which René Descartes, more than two hundred and fifty years ago, tried to impress on the world—give unqualified assent to no propositions but those the truth of which is so clear and distinct that they can not be doubted.

The Illinois License Requirements.—At the regular quarterly meeting of the Illinois State Board of Health, held at the Great Northern Hotel, Chicago, October 5, 1897, the following resolutions were passed:

Resolved, That after May 1, 1898, all non-graduate applicants for license to practise medicine and surgery who are examined in accordance with the provisions of the Medical Practice Act, in addition to the requirements already exacted, must present, as evidence of a satisfactory preliminary education, either—

1. A diploma or certificate of graduation from a high school.
2. A certificate of having passed the matriculation examination to a recognized literary or scientific college.
3. A certificate of successful examination by the faculty of any reputable university or college of arts or science (not members of a medical college faculty), by the State superintendent of public instruction of Illinois, or by the principal of a high school in Illinois, in the following branches: English grammar, arithmetic, elementary physics, United States history, geography, and Latin (equivalent to one year in a high school).

Each candidate will also be required to present a certificate from a medical college in good standing with this board, attesting that the applicant has—

1. Pursued the study of practical anatomy in said college for at least one term and has made dissections of the entire cadaver.
2. Taken at least one full course in operative surgery and practical obstetrics.
3. Personally attended six or more cases of labor.

Bacteriology has been added to the subjects of the non-graduate examination.

The Medical Society of the County of Tompkins, N. Y.—The programme for the last meeting, held in Ithaca on Wednesday evening, October 27th, included the following titles: A Report on the Society's Recommendation concerning the Tuberculin Test, by Dr. W. F. Willcox; Irrigation of the Bronchi, by Dr. W. L. Williams; and Old Fracture of the Elbow Joint, with X-Ray Plates, by Dr. Chauncey P. Biggs.

The Value of Kola as a Stimulant of the Parturient Uterus.—Dr. H. A. Hare (*Therapeutic Gazette*, October 15) remarks that the drugs that act as direct stimulants to the uterine muscle at about the time of full term, or upon the nervous centres in the spinal cord which control uterine contractions, are very few. Probably ergot is the only one possessing a well-defined action of this character. It has, however, for many years been recognized that quinine might be used for the purpose of supporting uterine contractions after they had normally originated, or for restoring them after they had been arrested by inertia or other cause. That quinine has not, however, any marked power over the uterus or its nerve supply, and acts almost entirely by a general stimulating effect on the nervous system, seems likely.

Some months since, Dr. Gundrum, of California, wrote to the *Therapeutic Gazette*, says Dr. Hare, suggesting the use of kola in uterine inertia. Dr. Hare therefore obtained from Parke, Davis, & Co. some of the fluid extract and placed it in the hands of Dr. B. C. Hirst for trial in the maternity wards of the University of Pennsylvania; in the hands of Dr. E. P. Davis, for trial in the Jefferson Maternity; and in the hands of Dr. R. C. Norris, for use in the Preston Retreat. Dr. William Schleif, acting under Dr. Hirst's direction, reported having used fluid extract of kola in a number of cases during labor at the Maternity. The following results were found, when the fluid extract was administered in thirty-minim doses (one dose):

1. The pains were more frequent and severe; in several cases this was quite apparent to the women themselves.
2. The women seemed much more excitable and demonstrative under the influence of the kola.
3. In several cases an unusual amount of bleeding followed the administration of the drug. In one case there was an adherent placenta. Whether the two last named factors were accidental or not, says Dr. Schleif, requires more clinical evidence to disprove or prove.

The kola was given both to primiparæ and to multiparæ, but only when a natural relaxation occurred in the character and frequency of pains—in other words, when an indication arose for the use of a stimulant to uterine contraction. In all cases only a single dose of thirty minims was given (P., D., & Co.). In only one case was there no effect whatever.

Dr. Davis sent the following notes:

"In two cases kola was given after labor had begun, and it is impossible to determine what part was played by the drug.

"In five cases from one to two and a half ounces was given each patient in doses of half a drachm every three hours during the day for several days previous to the beginning of labor. In these cases the commencement of labor did not seem to be hastened by the use of the drug, but after pains had once begun they seemed to be stronger, more regular, and the force no doubt continued longer under the use of the drug. In all cases the pains continued strong from the beginning of first stage until the end of labor, there being no cessation in any instance.

"In one case pains began two hours after the administration of kola was begun. The pains here continued strong and regular to the end.

"In one case the first stage began in the evening. Pains gradually grew stronger, although expulsion was impossible on account of faulty rotation (occip.-post.). Pains remained strong until child was extracted. Even under an anæsthetic pains continued very marked. This patient received kola for several days before labor in half-drachm doses every three hours.

"In two cases kola was given for two days, when labor apparently began. In a few hours, however, the pains ceased, and have not returned at this writing.

"In one case pains came on, but ceased soon after, and it finally became necessary to induce labor."

Dr. Norris replied as follows: He had used the fluid extract of kola in doses of twenty drops, repeated once in an hour, in seven cases of uterine inertia. The first patient, a multipara, had very fair uterine contractions for several hours, when they ceased almost entirely. The first stage of labor was about completed. The doses of kola were followed by strong pains and effective contractions. The labor was speedily terminated in a natural manner. Dr. Norris says he has repeatedly used forceps in similar cases.

The second patient, a primigravida aged thirty, became exhausted toward the close of labor, and the pains were weak and infrequent. Two doses of kola increased the strength, but not so markedly as in the first instance. The five other patients were, he thinks, stimulated.

Guaiacol in Chronic Coughs.—Dr. Adolph Goldhammer (*Medical Record*, October 23d) says that, although guaiacol is recognized as a valuable antituberculous remedy, its value in the treatment of chronic coughs of various character is not so well established. Having had remarkable success with this drug in many cases of cough of long standing, in which no tuberculous element could be recognized, he suggests its use in every case of cough of more than two weeks' duration. He states that he was first led to the employment of this remedy in a case in which the cough had existed for two years, and in which numerous other drugs had been used without avail. Under the use of guaiacol daily for a month, the cough disappeared and the patient has been entirely free from it ever since—a period of ten months. Since then the author has used guaiacol in every case of cough of more than two weeks' duration, irrespective of origin, with unvarying success. He has found it of decided value in cases of chronic bronchitis with or without asthma. In the chronic coughs of children guaiacol has proved especially beneficial. He has employed it even in several cases of whooping-cough with astonishing results. The paroxysms were rendered less severe and less numerous, and the duration of the attack was cut down to two or three weeks. For children of a delicate temperament, who have a poor appetite and who occasionally have a slight cough, guaiacol is a very valuable remedy, says Dr. Goldhammer. It stops the cough entirely in a short time, increases the appetite, and causes the patient to gain flesh. It is his opinion that many a case of incipient tuberculosis could be prevented if every old cough, no matter how slight, were treated by the administration of guaiacol. He therefore strongly recommends it as prophylactic against tuberculosis; but he desires especially to emphasize the fact that guaiacol is of immense benefit in cases of cough, not acute, in which no tuberculous element exists. In acute coughs, guaiacol does not act beneficially and should not be employed. He has carefully recorded thirty cases of cough of varied origin and description, in which no distinct tuberculous element could be recognized, and in which he employed guaiacol as a remedy. In twenty-six of these cases the cough disappeared entirely after the drug was used for periods of from two to six weeks. In the four remaining cases the cough was decidedly improved, although not entirely cured. Eighteen of these cases were in children under ten years and nine were in adults, three of whom were over sixty-five years of age.

As regards the administration of guaiacol, says the author, it is very well borne in the majority of cases, if well diluted with milk, although it has a nasty taste. It very seldom deranges the digestion. Those who can not bear its odor or taste can easily take it in capsules. He usually begins by giving five drops three times a day, in milk, to an adult. The dose may then be increased one drop daily up to fifteen drops three times a day. A child a year old can take two drops at a dose to start with, and then the dose may be increased slowly to four or five drops.

The Southern Surgical and Gynæcological Association.—The tenth annual meeting will be held in St. Louis on Tuesday, Wednesday, and Thursday, November 9th, 10th, and 11th, under the presidency of Dr. George B. Johnston, of Richmond. The programme is as follows: The Surgery of the Gall Bladder and Ducts, by Dr. J. McFadden Gaston, of Atlanta; Gallstones in their Relation to Cancer of the Gall Tract, by Dr. Charles A. L. Reed, of Cincinnati; The Disposal of the Stump in Appendicitis Operations, by Dr. W. D. Haggard, Jr., of Nashville; Appendicitis complicating Tubal and Ovarian Diseases, by Dr. Joseph Price, of Philadelphia; The Treatment of Abscesses of the Uterus (Puerperal) by Incision, Curettage, and Drainage, by Dr. George H. Noble, of Atlanta; A Study of Retroperitoneal Neoplasms and Suppurations, with Special Reference to Diagnosis, by Dr. Richard Douglas, of Nashville; A Case of Large Falloppian Tube from Hæmorrhage, with Hæmorrhage into the Ovary and Peritoneal Cavity, by Dr. Wesley Bovee, of Washington; A Case of Extra-uterine Pregnancy operated on at the Seventh Month, by Dr. J. G. Earnest, of Atlanta; Nephropexy without Suturing, by Dr. Nicholas Senn, of Chicago; A Series of Eight Amputations at the Shoulder Joint without Mortality, by Dr. Manning Simons, of Charleston; Cystic Disease of the Mamma, by Dr. L. M. Tiffany, of Baltimore; Tendon and Nerve Suture, with a Case, by Dr. W. E. Parker, of New Orleans; Resection of the Femur, by Dr. J. W. Long, of Salisbury, N. C.; Plaster of Paris as a Universal Fracture Dressing, by Dr. J. D. S. Davis, of Birmingham, Ala.; Peculiarities of the Surgical Diseases and Injuries of the Face, by Dr. Edmond Souchon, of New Orleans; Penetrating Wounds of the Chest, by Dr. J. B. Murfree, of Murfreesboro, Tenn.; An Exhibition of Radiographs, with Remarks, by Dr. A. V. L. Brokaw, of St. Louis; Pyuria, by Dr. Howard A. Kelly, of Baltimore; Sarcoma of the Uterus, with Specimens and Cases, by Dr. L. S. McMurtry, of Louisville; The Indications for Vaginal Hysterectomy, by Dr. Joseph Taber Johnson, of Washington; The Early Diagnosis and Treatment of Cancer of the Uterus, by Dr. W. H. Myers, of Fort Wayne; The Pelvic Floor: A Part of the Abdominal Wall, by Dr. M. C. McGannon, of Nashville; Chronic Proctitis, by Dr. D. F. Talley, of Birmingham, Ala.; Operative Treatment for Enlarged Prostate, by Dr. H. H. Grant, of Louisville; the president's address; The Treatment of Retrodisplacements of the Uterus, by Dr. Ernest S. Lewis, of New Orleans; Personal Observations in Abdominal Surgery, by Dr. H. Tuholske, of St. Louis; The Treatment of Uterine Myomata, by Dr. W. H. Wathen, of Louisville; Post-operative Intestinal Paresis, its Causes and How to Deal with it, by Dr. W. L. Robinson, of Danville, Va.; Ovariotomy in the Aged, by Dr. A. M. Cartledge, of Louisville; Remarks on Empyema, with a Report of Twenty Cases, by Dr. J. A. Goggans, of Alexander City, Ala.; A Case of Tetanus following a Surgical Operation, by Dr. J. D. Thompson, of Fort Worth, Texas; Improved Technique in the Operation for Intraligamentous Cyst; Presentation of Specimen, by Dr. Rufus B. Hall, of Cincinnati; Circumcision, its Psychic and Physical Relations, by Dr. C. R. Atchison, of Nashville; Two Cases of Intestinal Obstruction caused by Meckel's Diverticulum, by Dr. J. E. Thompson, of Galveston; Femoral Hernia, by Dr. R. Matas, of New Orleans; Sloughing Umbilical Hernia—Resection of Intestine, Recovery, by Dr. W. H. Doughty, Jr., of Augusta, Ga.; Tracheotomy for Foreign Bodies in the Air Passages—Report of Twenty-seven Cases, by Dr. W. F. Westmoreland, of Atlanta; Convenient Method for Sterilizing Instruments and Caring for them Afterward, by Dr. Edwin Walker, of Evansville, Ind.; Symphysiotomy as compared with other Obstetric Operations, by Dr. George J. Engelmann, of Boston; Extensive Cranial Fracture, with Marked Depression, without Symptoms of Pressure, by Dr. Desaussure Ford, of Augusta, Ga.; The Choice of Operation for Stone in the Bladder, with Cases, by Dr. Floyd W. McRae, of Atlanta; Excision of the Tongue, by Dr. George Foy, of Dublin, Ireland; and Nephrotomy for Pus in the Kidney, by Dr. W. E. B. Davis, of Birmingham, Ala.

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Original Communications.

PAPILLARY ŒDEMATOUS NASAL POLYPI AND THEIR RELATION TO ADENOMATA.*

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BILLROTH, in his classical work, *Ueber den Bau der Schleimpolypen*, in 1855, reported two cases of nasal tumor to which he gave the name of *Zottenkrebs*. One sprang from the middle turbinated bone among a mass of œdematous polypi. It was removed and recurred, and finally resulted fatally. In the other case the growth sprang from the inferior turbinated body. It passed from his observation, but he regarded it as belonging to the same category as that of the first case. In the light of our present knowledge of such cases as the latter we may be allowed to conjecture that it was a papillary hypertrophy of the inferior turbinated body. The reasons for this surmise will appear later in the course of this article. Hopmann (1), in his well-known paper on Papilloma of the Nose, gave a careful description of a papillary growth of the middle turbinated bone and referred to a similar one by Michel, which they both called an epithelioma papillare, but Hopmann hastens to say that he regarded his own growth as of a benign character. In another paper (2) I have had occasion to remark upon the confusing nomenclature introduced into rhinological literature by Hopmann in describing nasal growths, and I may add that in this instance it certainly seems unwise to give the name of epithelioma to a benign growth. Hopmann's case was also associated with œdematous growths. Zarniko (3) reported a similar case in a man of fifty years under the name fibroma of the nasopharynx, of a peculiar shape and structure; but it evidently had its origin in the region of the middle turbinated bone among œdematous growths. Again, a year later, Kiesselbach (4) reported a case, and adopted Hopmann's classification of a benign epithelioma papillare.

Several years ago I examined microscopically a growth removed by Dr. Charles H. Knight, of New York, from the middle turbinated bone of a man of fifty years. Figs. 1 and 2 represent drawings of the microscopic appearances of this growth.

No history of the case can be obtained at this time.

About a year ago Dr. F. W. Hinkel, of Buffalo, sent me a slide containing sections of a growth, from which I have had a drawing made representing the structure (Fig. 3). Later, he very kindly furnished me with the following history of the case:

Mrs. J. G. C., aged thirty-five years, in the winter of 1891 had an attack of *la grippe*. After this she began to notice the gradual increasing obstruction of the right nostril and a feeling of pressure in the right ear. During the summer she had blown a few fleshlike pieces from that nostril and there had been a slightly purulent discharge. Her general health was fairly good, although she was never very strong. On November 22, 1892, examination showed a red papillary mass filling the right nasal chamber, bathed in pus, but not extending beyond the vestibule. A posterior rhinoscopic view could not be obtained. The tumor was movable and attached to the upper and back part of the nasal cavity. The inferior turbinated body was slightly atrophied or compressed. The growth was quickly removed by the snare, and its dimensions were found to be about 2.5 × 1.5 × 1 ctm. It was a soft, friable, feathery, papillary mass. The hæmorrhage was moderate but persistent. Upon February 17, 1893, the patient returned, when the pedicle was seen to project from above the middle turbinated bone. This was removed by the snare. She was seen four days later, and again after an interval of seventeen days. She was feeling quite weak, and there was a pultaceous discharge over the vault of the pharynx. Some adhesion of the right middle turbinated bone to the sæptum had occurred. For three years and a half there was no recurrence of the symptoms, but three months later, symptoms having again appeared, the patient was examined, and it was found that the growth had recurred.

Dr. E. T. Dickerman (5), of Chicago, has lately published the report of a case which he called a nasal papilloma. The photograph of a microscopic section of the growth which accompanied the report led me to think that it probably belonged to the class referred to in this paper, and at my request he very generously placed the remaining part of the tumor at my disposal. Fig. 4 represents a drawing made from a section of one part of it, and Fig. 5 that of a section made from another part of the same growth. From Dr. Dickerman's published report of the case I copy the clinical history of it:

"*May 2, 1896.*—John O'Connor, aged sixty-two years, presented himself at my clinic complaining that his right nostril had been occluded for some time. The man was in perfect health, and his previous and family history good. He stated that nine years ago his nose had first become occluded, and that he consulted a local surgeon, who had gone blindly into the nose with forceps and curette, and had removed a large amount of 'flesh.' For about a year he was well, but for the last five years his nose had been closed. On examination I found nothing of importance externally. On looking into the right nostril I found the nose filled to the vestibule with a pinkish-gray cauliflower mass. It was not ulcerated and was movable, apparently having a small pedicle. With a probe I was able to locate its attachment to the upper and anterior part of the quadrangular cartilage to what seemed to be a small ecchondrosis. Posteriorly the choana was filled with the same growth, with the one exception that here one or two of the branches appeared œdematous and protruded through the middle meatus. The absence of ulceration, infiltration at the point of insertion, and enlargement of glands and the duration of the disease, compelled the diagnosis of sæptal papillary fibroma. With a strong pair of scissors I was able to remove a large portion of the growth with the thickened portion of the sæptum attached. The remainder was removed with the cold snare and the base cauterized. The hæmorrhage was at no time profuse, and at the present time there is no recurrence of growth."

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* Read before the American Laryngological Association at its nineteenth annual congress.

By the drawing of Dr. Hinkel's case (Fig. 3) you will see at a glance the nature of the external configuration of the growth and of its structure—numerous finger-like processes springing from a common base. Many of them have rounded or club-shaped extremities. Examined microscopically, it is seen that these processes are made up of loose œdematous fibrous tissue covered by one or two layers of columnar ciliated epithelium; but it is apparent that the epithelial development is a complex one. In no place is there any marked thickening of the layers, but the surface epithelium is seen to communicate and to be continuous with deep indentations and ramifications of it into the underlying stroma. Separate rings of epithelium, ovoid, circular, or ramified in shape, and varied in extent, are seen to occupy and make up a large part of the bulk of the growth. The structure in Dr. Dickerman's case and its external configuration is almost identical with the above.

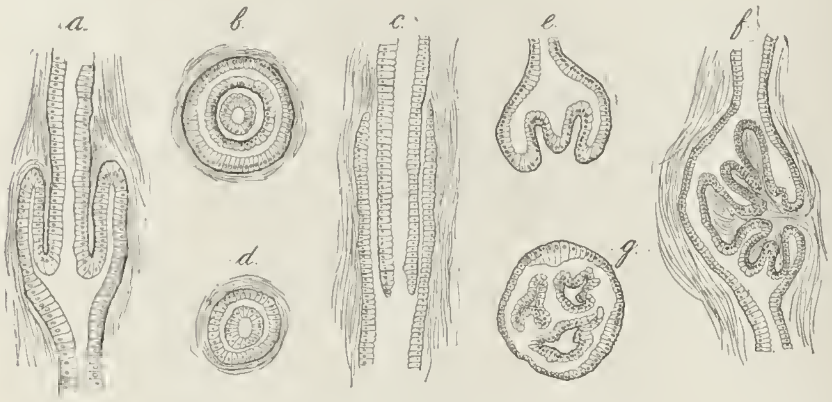

FIG. 1.—Schematic drawings from Amann.

In order to make this matter more clear I reproduce here some of the schematic drawings from Amann's book.

A cross-section of the duct *a*. at the line indicated, would give us the appearance *b*. There may be a solution in the continuity of the epithelium as in *c*; then in cross-section we have the appearance *d*. The cells of the acini may proliferate also as in *e* or in *f*, and a cross-section would give the appearance *g* or a still more complicated figure in the cross-section of *f*.

After careful study I am unable to distinguish the actual segmentation of the cells in their long axes, and I am inclined to think that some of the cells at east are formed from the underlying connective tissue, or by some other form of proliferation than segmentation through their long axes; but the comparatively slight increase in the number of layers and the convolutions of the rows of epithelium would bear out Amann's description.

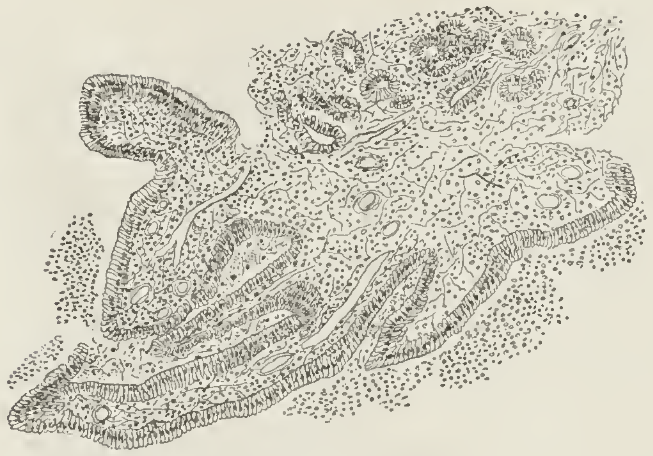

FIG. 2.—Dr. Knight's case.

Examined with the high power one is immediately struck with the amount of mitotic granules in the epithelial cells (Fig. 6). Evidently proliferation is rapidly going on, but not in such a way as to increase markedly the number of layers. By the study of these growths alone it is impossible to arrive at an understanding of the method of their pathogenesis. To do that, we must not only study like processes in other parts of the body, where their more frequent occurrence furnishes a more ample opportunity, but we must study analogous nasal processes and this same epithelial proliferation at an earlier stage if possible.

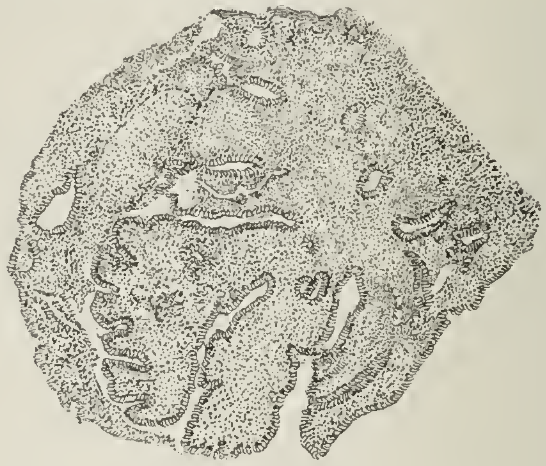

FIG. 3.—Dr. Knight's case.

I quote from Cornil and Ranvier (6) the following: "Among the polypi of the nasal fossæ are some which so resemble the cystic adenomata of the uterus that it is impossible to distinguish them by comparative examination with the naked eye or with the microscope." *

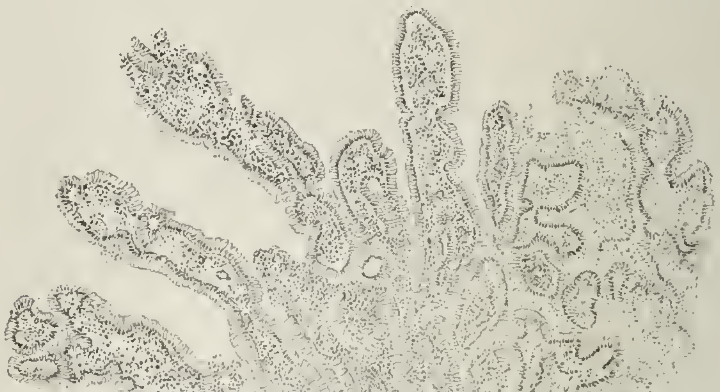

FIG. 4.—Dr. F. W. Hinkel's case.

Birch-Hirschfeld (7) and Weichselbaum (8), in their works on pathological anatomy, both describe and give drawings of papillary cystomata of the ovaries and of processes of chronic inflammation of the uterine mucosa which closely resemble the nasal growths under consideration, and Amann (9) has lately given an admirable description and explanation of their complicated structure. He shows that in glandular hypertrophy the cells of the ducts and of the acini of the glands proliferate by

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* I have in my possession a good example of the same process in a glandular polypus of the rectum.

segmentation parallel to their long axes.* This causes an elongation of the rows of epithelium and not an increase in the number of the layers. This necessarily

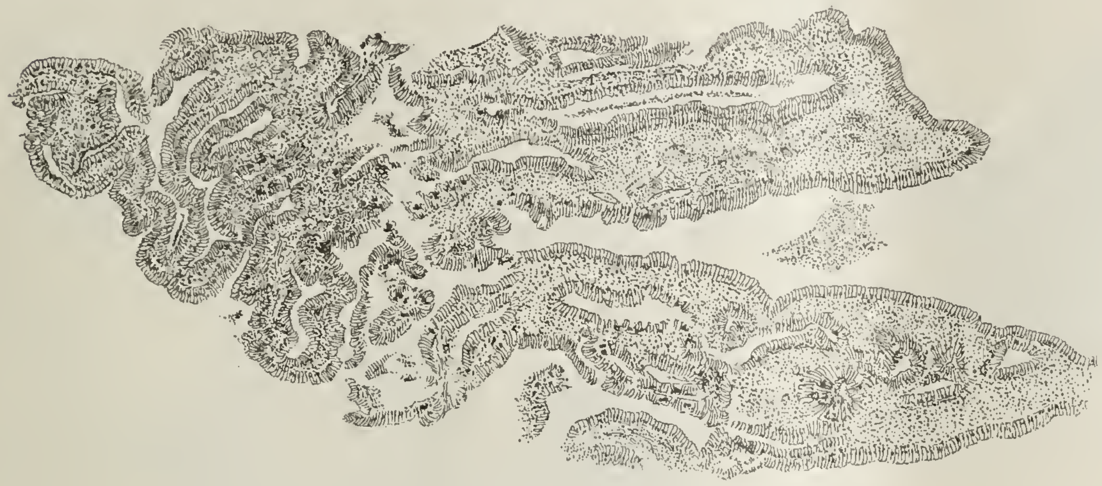

Fig. 5.—Dr. Dickerman's case, showing adenomatous tissue.

leads to a convolution of the ducts or to an invagination of their walls. The walls of the acini are also doubled and folded on themselves in such a way as to in-

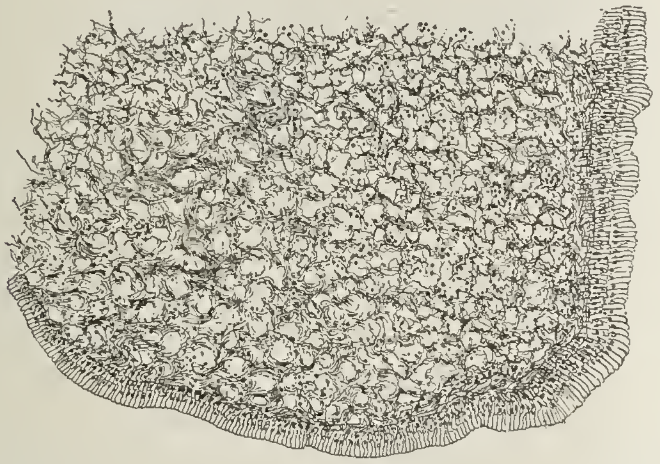

Fig. 6.—Dr. Dickerman's case, showing œdematous structure.

crease the labyrinthian maze of epithelial rows. On cross section, therefore, we have very much the same

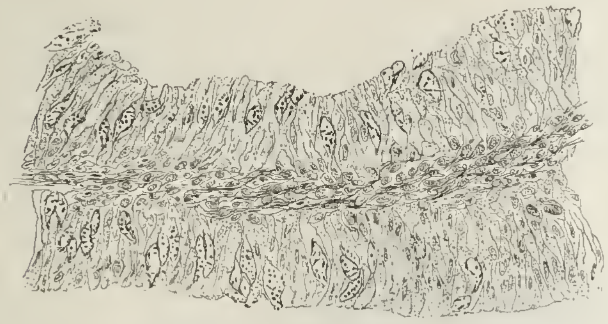

Fig. 7.—Dr. Hinkel's case, showing mitosis in the cells.

appearance as would be presented by section through a bunch of angleworms.

Now to return to our nasal growths. On a study of the mitotic changes in the columnar cells of the surface, it may be seen that this proliferation goes on there as well as in the glands, so that the surface is raised into papillæ by the extension of the rows of epithelial cells. This overgrowth of epithelium within the substance of the tissue of a polyp would crowd out much of the œdema and compress the stroma fibres. This is the condition we have both in Dr. Hinkel's (Fig. 4) and in Dr. Dickerman's specimen, in that part from which Fig. 4 is taken. You will observe, however, that in the other section from Dr. Dickerman's case (Fig. 6) the structure is that of an ordinary mucous polypus. The stroma in Dr. Hinkel's case is also œdematous in places, and this must be borne in mind with the clinical fact apparent in most of the histories, that these growths have usually been found combined with polypi of the middle turbinated bone. It becomes necessary for us, therefore, to see if any pathogenic connection exists between these growths.

You may remember that several years ago I read a paper (10) before this association to show that nasal polypi are not usually myxomatous. In the light of much subsequent experience in the histological examination of morbid nasal conditions I am ready to state my belief that true myxoma, as it is understood by histolo-

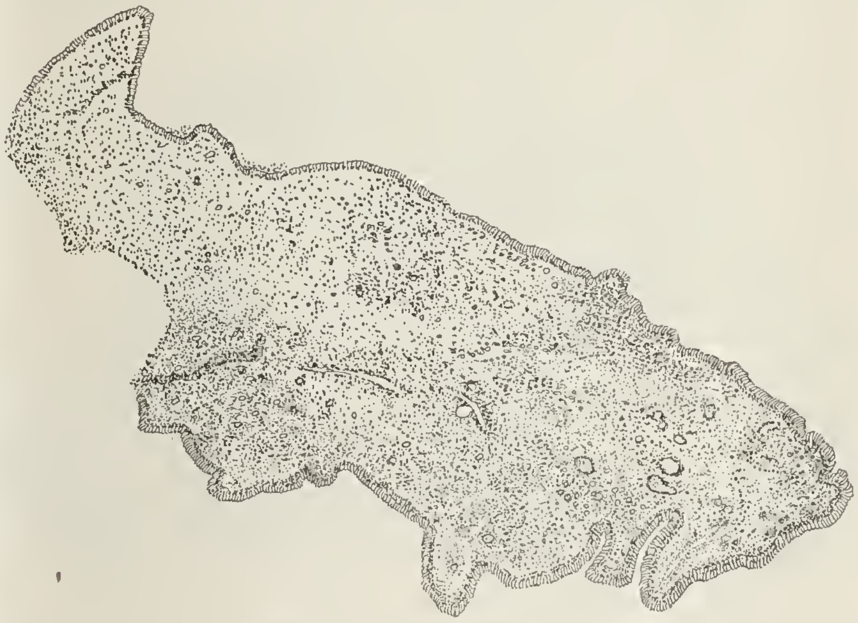

Fig. 8.—Papillary œdematous polyp.

gists, never occurs in the nose. In arriving at this conclusion I have examined, in the aggregate, nearly a hundred mucous polypi from the nose. I believe that they are the result of chronic inflammation.

It so happens that I have preserved one or more slides of nearly all my pathological material, and in looking over those of œdematous polypi I am able to select a series of slides which show fairly well an apparent transition from the ordinary smooth form of the latter to the papillary state (Figs. 7, 8, and 9).

It is evident that other influences are at work besides epithelial proliferation to produce this papillary surface in mucous polypi. Zuckerkandl (11) says that

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* After careful study I am unable to distinguish the actual segmentation of the cells in their long axes, and I am inclined to think that some of the cells at least are formed from the underlying connective tissue or by some other form of proliferation than segmentation through their long axes, but the comparatively slight increase in the number of layers and the convolutions of the rows of epithelium would bear out Amann's description.

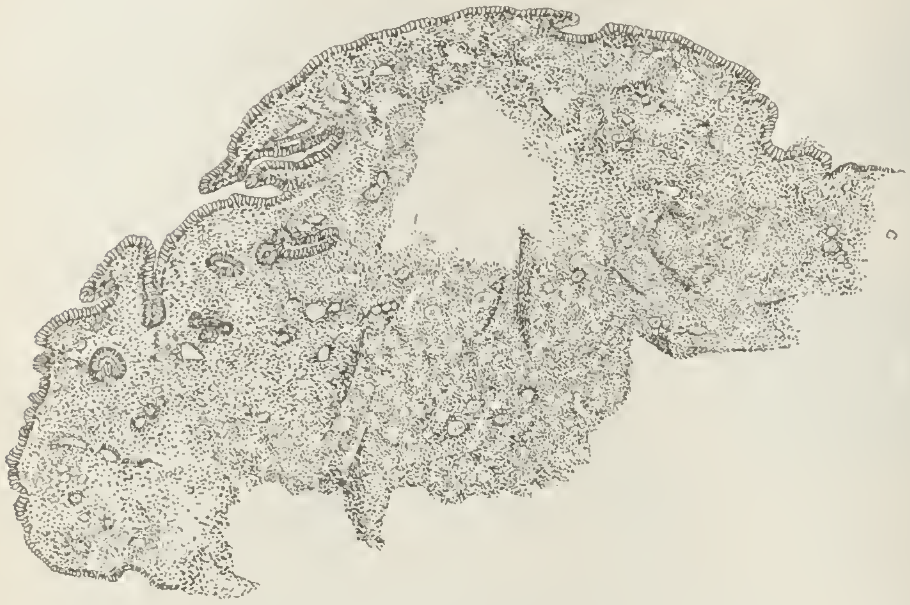

FIG. 9.—Papillary œdematous polyp.

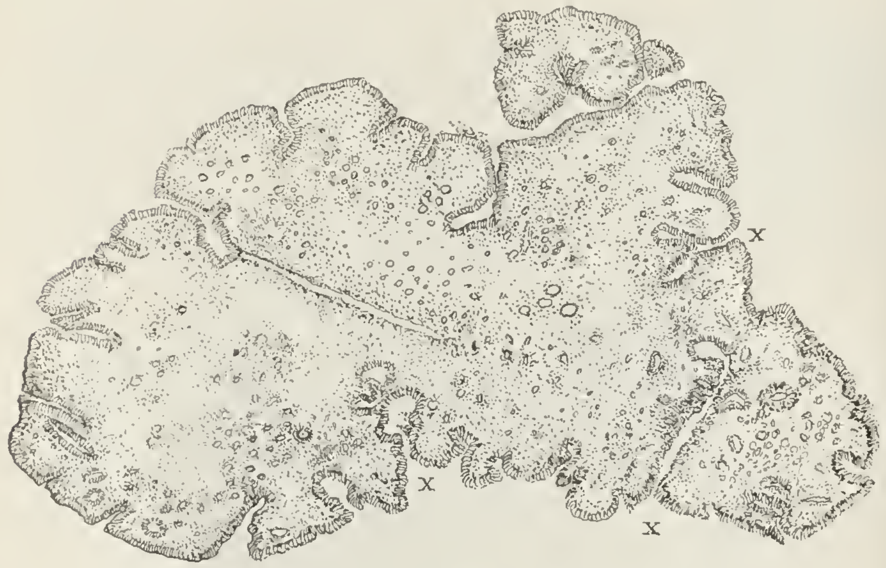

FIG. 10.—Papillary œdematous polyp. X, dilatation of gland ducts.

he has observed a dilatation of the mouths of the glands produce a curvature of the surface epithelium: "The chief ducts of the glands become dilated; the same occurs in their communicating acini, which thus among themselves and with the ducts unite to form indentations" (Buchten). On a reference to the drawings from my specimens, as in Fig. 9, at *x* you will note the phenomenon referred to by Zuckerkandl. This will doubtless explain some of the puzzling curvatures of the epithelium within the growth (Fig. 3) and yet communicating freely with the surface, but will not suffice by itself as an explanation for the enormous development shown in the specimens of Dr. Hinkel and Dr. Dickerman. The segmentation of the glandular and surface epithelium, as noted above, will supply this deficiency, but we still have another influence at work to lengthen out the papillæ of the surface, and that is the proliferation of the fibrous tissue. Abundant mitotic figures may also be seen in some of the cells of the connective tissue. This brings us to the realization of the fact that we have instances of these processes going on in other growths of the nose than mucous polypi, and in other situations than upon the middle turbinated bone. I have suggested that the dilatation and collapse of the erectile tissue determines, to some extent, the configuration of the surface in the "mulberry hypertrophies" of the inferior turbinated bodies, but the increase in the fibrous tissue, and the dilatation of gland ducts, here, as in the œdematous growths of the middle turbinated bone, are the chief adjuvants to the epithelial proliferation in the production of a papillary surface. I have slides from growths of the inferior turbinated bodies to show as an illustration of this also. One of them (Fig. 11) shows that the growth of the fibrous tissue is the chief element in the digitations, while the other (Fig. 12) shows also considerable epithelial hyperplasia.

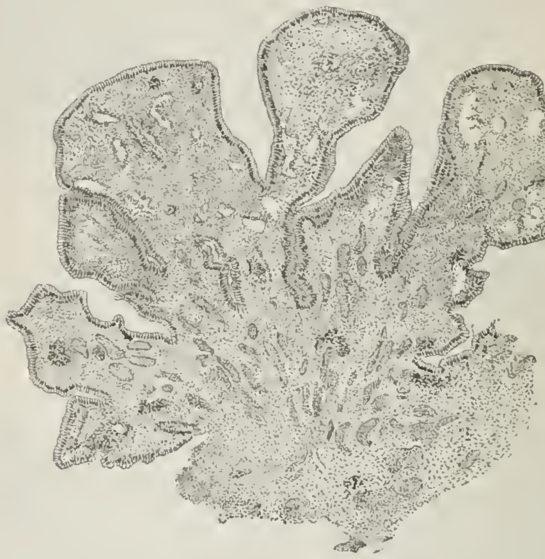

FIG. 11.—Papillary hypertrophy of the posterior end of the inferior turbinated body.

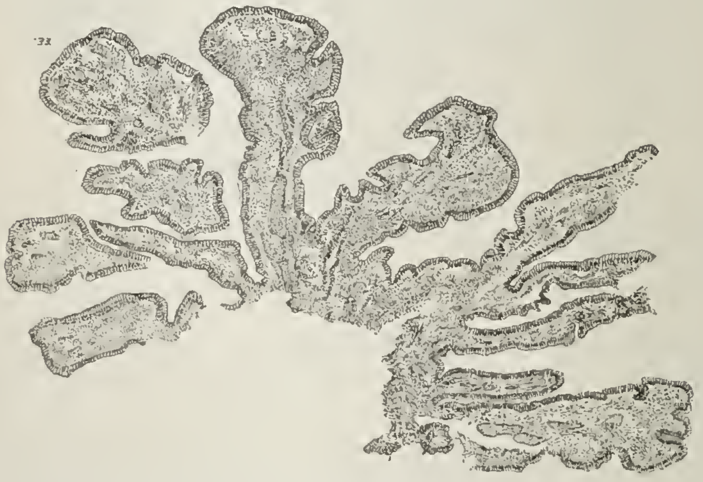

FIG. 12.—Papillary hypertrophy of the inferior turbinated body approaching an adenomatous condition.

Since the completion of the observations which form the subject of this paper I have received from Dr. F. E. Hopkins, of Springfield, a specimen which proves to be an adeno-carcinoma of the nose. In many places it is impossible to distinguish the structure from that found in Dr. Hinkel's and in Dr. Dickerman's cases, and it is therefore impossible to say with certainty that there are not, in unexamined parts of their growths, carcinomatous elements which are not to be found in the parts submitted to me for examination. Dr. Hopkins, I believe, is to report his case at this meeting, and you will see from the drawing of the microscopic appearances the resemblance of the structure to that of those growths of which I have been speaking.

Thus you will see the gradations in development from the ordinary mucous polypus through a benign adenomatous growth to a malignant one. In the mucous polyp and in the adenoma we have the results, I believe, of an inflammatory process. At first we have the effusion of serum into the tissues from the blood-vessels. Afterward, or *pari passu* with it, we have the proliferation of the fibrous tissue. This makes an œdematous mucous polyp. Then, in these rare adenomatous and papillary growths we have the proliferation of the glandular and surface epithelium.

The tendency of adenomatous growths to become sarcomatous or carcinomatous is well known, and has been long recognized. This brings us to the ætiology of carcinoma and sarcoma, and into that I am not capable of entering.

We know that epithelial proliferation of another type produces the fibroma papillare or true papilloma of Virchow, and that this also has some affinities with chronic inflammation, as exemplified in the pachydermia verrucosa of the larynx. The tendency to papillary formations is seen not only in the epithelium covering fibrous tissue, but, as I have lately had occasion to observe, lymphoid tissue of the faucial tonsil is occasionally thrown into the digitations covered by proliferated squamous epithelium, which give to the surface a papillary vegetating appearance.

In fact, so close a relation exists between the products of inflammation and many of the various forms of benign tumors that I must acknowledge my inability to draw any practical line between them. So far as my observation goes in reading works on pathology, this can only be done to the satisfaction of those who know nothing of the subject, but it is a great convenience to the teachers of students.

In presenting this paper I desire to express my sense of great obligation to the gentlemen who have so generously placed their pathological material at my disposal for study.

1. Hopmann. Virchow's *Archiv*, No. 93, pp. 234–236.
2. Wright. *N. Y. Medical Journal*, December 26, 1891; *Trans. Am. Lar. Assoc.*, 1891.
3. Zarniko. Virchow's *Archiv*, No. 128, p. 132.
4. Kiesselbach. Virchow's *Archiv*, No. 132, p. 371.
5. Dickerman. *Annals of Ophth. and Otol.*, October, 1896, p. 1125.
6. Cornil and Ranvier. *Manuel d'histologie pathologique.*
7. Birch-Hirschfeld. *Lehrbuch der path. Anatomie*, Bd. ii, p. 746, 1887.
8. Weichselbaum. *Grundriss der path. Histologie*, 1892.
9. Amann. *Lehrbuch der mikr. gynäkologischen Diagnostik*, 1897.
10. Wright. *N. Y. Medical Journal*, November 4, 1893; *Trans. Am. Lar. Assoc.*, 1893.
11. Zuckerkandl. *Norm. und path. Anat. der Nasenhöhle*, ii, 1892, p. 109.

A CASE OF
ADENO-CARCINOMA OF THE NOSE.*

By F. E. HOPKINS, M. D.

For every point of material value in connection with the report of this case we are indebted to Dr. Wright, who by his examination of the specimen demonstrated it to be of interest, secured the microscopical drawings, and furnished the notes on the general subject of carcinoma of the nose. I greatly appreciate his courtesy, the more so that I have had no leisure for research since my attention was called to the case; indeed, it did not come under my observation until after the publication of the programme for this meeting. The case presents the following history:

Isaac A., a native of Massachusetts, eighty-three years of age, a large, well-developed man, who has always enjoyed good health, and continues to do so notwithstanding the local affection. The term "good health" is of course a relative one as here used. The patient has long been in the vegetative stage. He has an excellent appetite, good digestion and assimilation, and is well nourished, but naturally presents the decrepitude of advanced age. No trace of cancer can be discovered in his family history, but many of his immediate relatives have died of tuberculosis. About twelve years ago he began to suffer from nasal obstruction attended by a watery discharge. The symptoms at the beginning were limited to the left nasal fossa. The obstruction increased until this passage was occluded, but the patient did not seek relief until six years ago. Up to this time there had been no symptoms other than those of mechanical obstruction and the constant flow of mucus. No pain and no epistaxis. Operation was then attempted, but to no purpose so far as securing relief was concerned. The manipulation caused a hæmorrhage from the nose of such severity that the doctor declined to proceed with the operation, and nothing more was done at that time. A month later free epistaxis occurred spontaneously. The doctor has written me that the tissue broke down easily and bled freely upon any attempt to use the snare, and that he secured but a small fraction of the growth. His suspicions were not aroused, and he evidently regarded the growth as one of myxoma.

Later the patient made a further attempt to get rid of the neoplasm by calling upon another physician, who, with a strong forceps, removed some portion of the growth, and pronounced the case one of polypi. The descriptions given by the patient and his son of the tissue removed would lead one to infer that the diagnosis might then have been correct. The description of form, consistence, and color, together with the fact that the rough manipulation with the forceps was not followed by any considerable hæmorrhage, tallies with the supposition that the growth removed was myxoma. The doctor also has written me that this was his diagnosis. A description of the method of operation still further impresses one with the probability of the transformation of a possible benign into a malignant growth through rough treatment. The old gentleman was taken into the orchard beside the house and there, without anæsthesia of any kind, without the aid of head mirror or speculum, a large, strong forceps was introduced and anything seized was dragged out. The patient is made of heroic or stoic material, and endured this sort of manipulation at three separate sittings at intervals of one year, though at no time did he secure nasal respiration or any lessening of the annoying and persisting flow of mucus.

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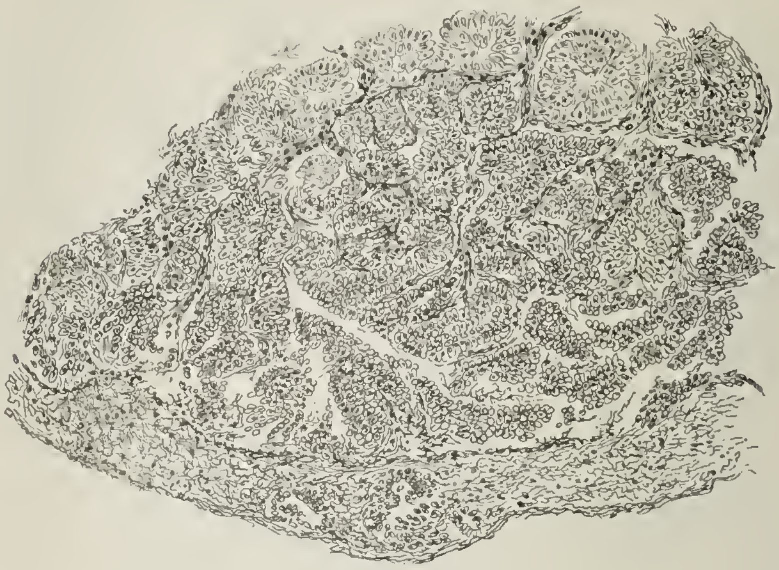
* Read before the American Laryngological Association at its nineteenth annual congress.

When the patient came under my observation, April 10, 1897, there had been no surgical interference for a period of three years. During the entire period of nasal stenosis there had been no pain; epistaxis occurred at long intervals, sometimes during sleep. He complained only of the mechanical obstruction and the constant flow of acrid sanious mucus. Of the two, the discharge seemed to trouble him more, for it was of such quantity as to make him present a constantly untidy appearance, and had a decidedly bad odor. The left side of the nose is deformed by the internal pressure of the neoplasm, and the left eye is displaced outwardly to a slight degree by the same force.

The photograph does not bring out the deformity as I had hoped it would do. The strong light upon that side of the patient's face makes this region appear as a plane surface. The sæptum is forced toward the right side till it lies in contact with the outer wall of the nose. The mass of tissue protruded into the vestibule and extending backward into the nasopharynx reached across the sæptum and completed the occlusion of the right naris. The mass protruding from the choana was covered by a grayish slough; that lying in the vestibule was of a dusky red, almost brown, color, a liverlike mass, easily breaking down and bleeding even upon the gentlest touch. There is no glandular enlargement. With the cold-wire snare I secured a small fragment for examination. This was followed by hæmorrhage, which was controlled with difficulty. The specimen was submitted to Dr. Wright for examination, and the following is his report:

"Two irregular papillary masses about three centimetres in their long diameters. Microscopically, it is seen to be made up almost exclusively of cylindrical-celled epithelium arranged in the form of tubules and acini in places, but in others crowded together in irregular masses, but with a general tendency to concentric arrangement. As a rule, the cell bodies are pale and granular and the nucleus more distinct. In places the degenerative changes in the cells were advanced further. There is very scanty connective tissue. Diagnosis, adenocarcinoma."



Primary carcinoma of nasal fossæ is a rare affection. No man, however wide his opportunities for observation, has seen more than a few cases. Indeed, but a very limited number have been recorded by all observers. The medical journal of widest circulation in this country has a record of but one case in twelve years. The *Journal of Laryngology, Rhinology*, etc., for a period of nearly six years has but one. The former was seen by Dr. Wright,

No.	Variety.	Age.	Sex.	Origin and attachments.
1	Medullary.	31	Female.	Sæptum.
2	?	50	Female.	Sæptum.
3	Encephaloid.	60	Female.	Apparently (from history) in upper portion of nose.
4	Melanotic.	66	Male.	?
5	Melanotic.	56	Male.	Outer wall.
6	Encephaloid.	40	Male.	?
7	Lobulated epithelioma.	?	?	Sæptum, left side.
8	Lobulated epithelioma.	73	Female.	Right fossa.
9	Glandular (adeno-?) carcinoma.	54	Male.	Upper part of right nasal cavity.
10	Tubular epithelioma.	57	Female.	
11	Pavement celled epithelioma.	53	Male.	Roof of left nasal cavity.
12	Pavement-celled epithelioma.	44	Male.	Ala.
13	Cylindrical - celled carcinoma.	51	Male.	Inferior turbinated, left.
14	Scirrhus epithelioma.	56	Male.	Beneath middle turbinated.
15	Carcinoma.	31	Female.	Inferior turbinated (?). Case of Dr. Douglas.
16	Adeno-.	47	Male.	Left inferior turbinated. Died three months after operation.
17	Myxo-.	61	Male.	Left middle turbinated. Well (?) three months after operation.
18	?	46	Male.	
19	?	59	Male.	
20	Epithelioma.	64	Female.	Upper part nasal fossa.
Three cases are to be added to Dr. Wright's list, but which do not change his conclusions, as follows:				
21	Adeno-carcinoma.	50	Female.	Adherent to ethmoid. Died. Dr. Leland's case.
22	Carcinomatous lymphoma.	46	Female.	Sæptum; operation; no recurrence after ten weeks. Dr. Sikkel's case.
23	Adeno-carcinoma.	83	Male.	Probably originally in upper part of nose. Hopkins's case.

and he gives a description of it in his notes here appended. The latter was reported by Dr. Sikkel at the second annual meeting of the Dutch Society of Laryngology, Rhinology, and Otology in July, 1894, and appears in the *Journal of Laryngology, Rhinology*, etc., for June, 1895. This occurred in a peasant woman aged forty-six years. It was attached to the sæptum. The growth was removed, and after ten weeks there had been no recurrence. The microscopical diagnosis was carcinomatous lymphoma.

Dr. Leland has recently had a case of adeno-carcinoma of the nose which he will report at this time.*

It seems quite probable that a larger number of cases of carcinoma of the nose will be reported in the future, for even if the number of cases of cancer is not increasing the number of observers is, so that the record will be more complete.

The following are Dr. Jonathan Wright's notes on carcinoma of the nose:

"This is a very rare occurrence. Seifert and Kahn picture one in their Atlas, without giving any reference to the history. Dr. Beaman Douglas has lately reported a case (New York *Medical Record*, August 8, 1896) of carcinoma of the inferior turbinated, which I had the privilege of seeing. Although the ulceration was on the turbinated body, it is a matter of some doubt, judging from the history, whether it really was not primary in some contiguous structure. The variety of carcinoma is not mentioned in the history. Bosworth collected from literature the records of thirty cases, but less than half of them are supported by a satisfactory microscopic diagnosis. I have tabulated these cases, together with Newman's two cases and Dr. Douglas's case, making twenty cases in all in which the diagnosis seems to have been established by histological evidence. Of the twenty cases, seven were women and twelve were men. In one case sex was not indicated. Eight cases were between fifty and sixty years of age; five were over sixty, and six younger than fifty, the two youngest being women of thirty-one years. The duration seems never to have been more than three years. Sarcoma and carcinoma are more frequent in men than women. Sarcoma occurs most frequently between forty and fifty; carcinoma between fifty and sixty. It will also be noted that, like benign true tumors, malignant growths more frequently spring from the sæptum than from any other part of the nose.

"*Symptoms.*—Practically the signs of intranasal cancer do not differ from those of sarcoma. Pain, sanious discharge, epistaxis, nasal stenosis, and external deformity are all present. The general health is perhaps more quickly affected.

"*Diagnosis.*—Examination reveals a fungous mass filling the nasal fossa, which bleeds easily. The only condition that it may be confounded with is syphilis. As between carcinoma and sarcoma the only reliable method of diagnosis is the use of the microscope, while the iodide of potassium should always be used in every case of supposed intranasal malignancy, that syphilis may be excluded. As was said, the microscope must decide between carcinoma and sarcoma, because these growths are both so rare that no rhinologist can have a wide enough experience with them to render his differential diagnosis of any value.

"*Prognosis.*—This is uniformly bad, the duration of the disease being frequently not longer than a year, and never longer than three years. The vascularity of the mucosa renders extensive involvement of the parts a rapid process. The foregoing statement applies more particularly to carcinoma of the nose; the adeno-carcinomatous cases run a much more prolonged course.

"*Treatment.*—A careful analysis of the cases seems to show that operative procedures in cancer of the nose neither lengthen life nor alleviate suffering. Detergent and antiseptic washes are to be constantly used in the nose, and narcotics are to be given with a free hand."

A CASE OF SINGLE FUSED KIDNEY.

By GEORGE TULLY VAUGHAN, M. D.,

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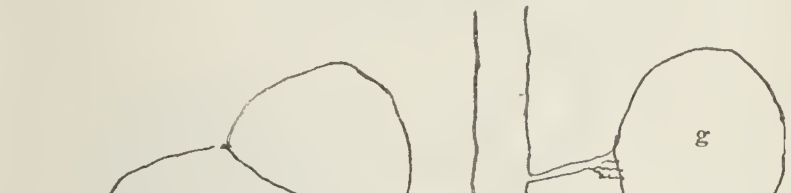
PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY,
GEORGETOWN UNIVERSITY, WASHINGTON, D. C.

This is probably the rarest form of anomalies of the kidney. Woolsey, in Morrow's *System of Genito-urinary Diseases*, gives the frequency of horseshoe-shaped kidneys as 1 in 1,600; of complete absence of one kidney, 1 in 4,000; and of single fused kidney, 1 in 8,000.

The body in which this anomaly was found was that of a man thirty-eight years old, a native of New York, and a sailor by occupation, who died at the German Hospital, Philadelphia, of acute suppurative



Front view of fused kidney. Figures 1, 2, 3, 4, and 5 indicate the lobules with grooves separating them from one another. *a*, right ureter; *b*, left ureter coming from the anterior hilum; *c*, *d*, *e*, and *f* indicate the four renal arteries; *g*, left suprarenal capsule and artery.

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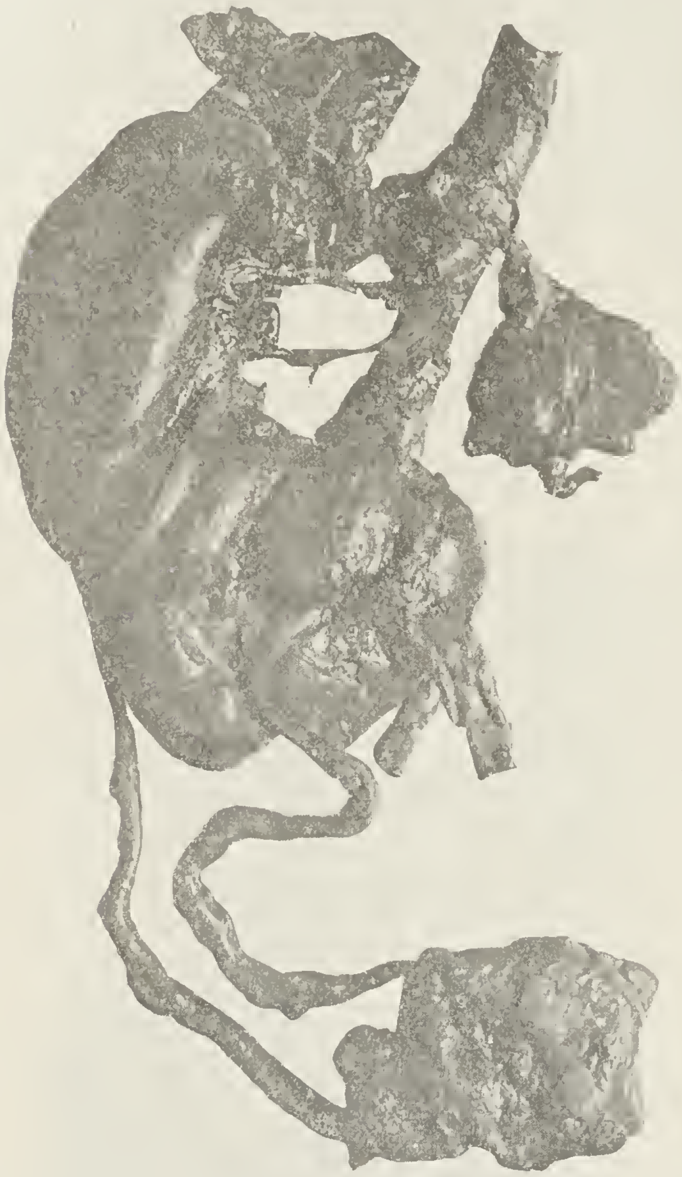
* Dr. Hamilton, of Brattleboro, Vt., has just written me of a case of cancer of the nose, but the description is not sufficiently definite to allow of its being classified with this list.

peritonitis after resection of the small intestine. There was no history of renal trouble at any time, and two examinations of the urine while the patient was under treatment indicated a healthy condition of the kidneys. At the necropsy it was ascertained that no kidney was present on the left side, though there was a suprarenal capsule, fully developed, five by four centimetres, oval in shape, in the normal position, and supplied by a small branch from the left side of the aorta.

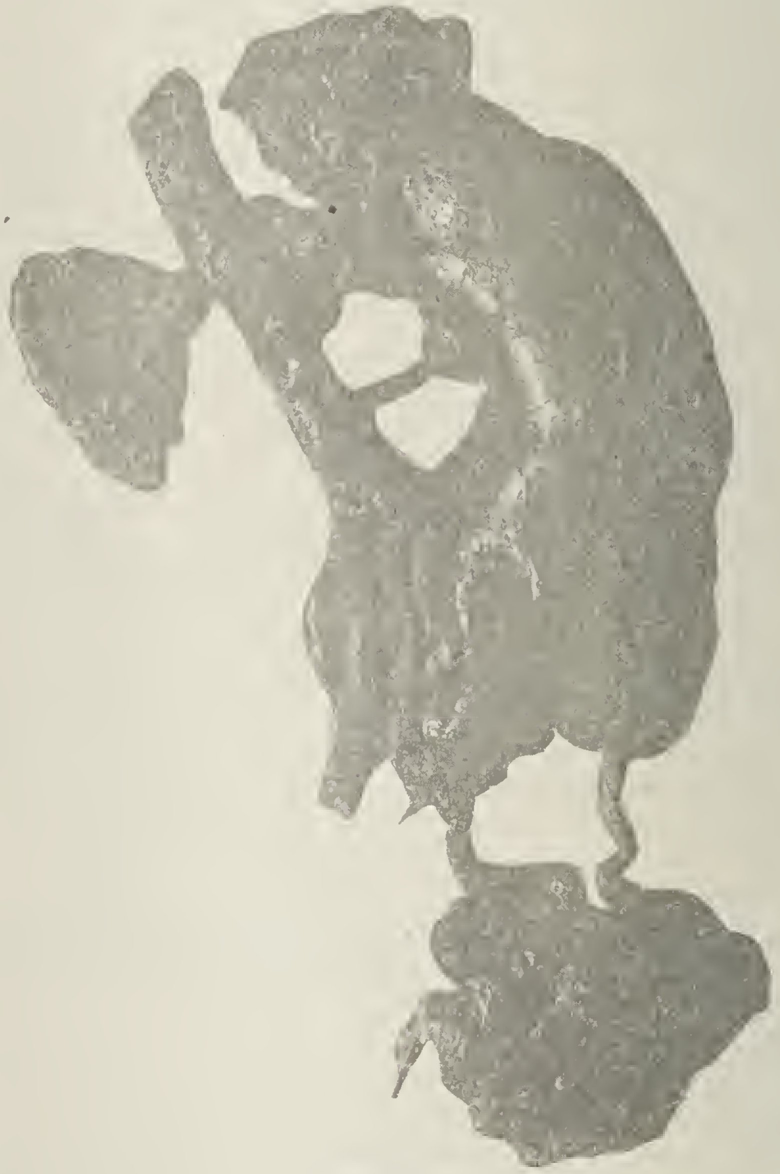


Anterior view of single fused kidney. Showing aorta, suprarenal capsules, ureters, and bladder.

Shape.—On the right side was a large kidney mass, of L shape, as if two kidneys had been fused together at right angles, the vertical portion joining the side of the horizontal portion, which apparently lay on its back with the hilum on its anterior surface. The hilum of the vertical portions was on the inner side, as is usual. The vertical portion was in the normal position, with a normal suprarenal capsule above, while the horizontal portion extended two centimetres across the aorta just above its bifurcation into the iliacs on the fourth lumbar vertebra. The posterior surface of this mass was flat and smooth, with no indication of division into lobules or of the line of fusion. The anterior surface, more rounded, presented four grooves, three horizontal and one vertical, suggesting the division of the mass into five lobules. The lowest transverse groove does not extend completely across the kidney, but from the inner side only to the upper end of the vertical groove. From this point extending up to the second groove is the large four-sided hilum.

Ureters.—The right ureter originates in a large pelvis near the centre of the vertical arm opposite and behind the first two renal arteries, but in front of the superior branch of the third artery, and descends across the horizontal portion, thence along the right side to the bladder in the normal way. The left ureter originates from the hilum on the anterior surface as follows: Four infundibula spring from the hilum, one from each of the four lower lobules, the largest coming from the lobule at the angle. These infundibula unite outside and in front of the kidney to form a pelvis from which the ureter arises, descends to a point just below the lower border of the kidney, crosses the right common iliac artery and vein to the inner side of the left common iliac, along which it descends, lying over the left iliac vein, to the pelvis, and thence normally on the left side to the bladder. Length of right ureter, thirty-two centimetres; of left, twenty-seven centimetres.

Arteries and Veins.—There are four renal arteries, three coming from the right side of the aorta and one from the left side of the front of the aorta opposite the lowest branch on the right. The first artery enters the hilum of the vertical arm four centimetres from the upper end and divides into three branches, first giving off a small branch from its middle to the right suprarenal capsule. The second, the smallest of the four, arises two centimetres below the first, enters the hilum three centimetres below the first, and divides into two branches. The third, the largest of the four arteries, arises 3.5 centimetres below the second by a short trunk which divides into two branches, the superior entering the hilum of the vertical arm opposite the first transverse groove two centimetres below the second artery



Posterior view.

and divides into three branches, while the inferior passes over the front of the kidney, lying in the second transverse groove to the anterior hilum, where it divides into three branches.

The fourth artery, about the size of the first, curves from left to right across the aorta, enters the third transverse groove, and divides into two branches. The veins correspond to the arteries.

Nerves.—There were several small ganglia on the first and third arteries, from which numerous filaments arose and formed an intricate plexus. On section the kidney structure appeared healthy, save perhaps slight cloudy swelling.

Size and Weight.—From top to bottom the mass measured eighteen centimetres; length of horizontal arm, 10.5 centimetres; width of vertical arm, greatest, seven centimetres; least, 4.5 centimetres; of horizontal arm, greatest, seven centimetres; least, five centimetres; thickness, uniformly four centimetres. Weight, including the suprarenal capsules, ureters, bladder, and the corresponding section of the aorta, five hundred and twenty-five grammes. (See drawing and photograph.)

A CASE OF TETANUS.

By J. RUDIS-JICINSKY, A. M., M. D.,

CRETE, NEBRASKA.

On the 6th of August, 1897, at 12.30 P. M., I was summoned to see a patient, a farmer, who lives about five miles from town; his age, forty-eight; health before apparently perfect. About a year ago he had phlegmonous erysipelas on the right hand. This was treated constitutionally and locally with hot antiseptic fomentations, multiple incisions, and strict antiseptic dressing. Upon my arrival, at 1 P. M., I learned from the wife that her husband on arising cleaned the stable and tried to wash out a very unclean wound on the leg of one of his horses, and finally went out to see his pigs. That was about 7.30 A. M. One of the boars, very wild, made a sudden attack on him, threw him down on the dirty ground behind the fence, and bit him in the left thigh near Hunter's canal, producing a two-inch deep, ugly, unclean, and lacerated wound. The wound itself was not very large, but the bleeding profuse (from 7.30 A. M. up to 1 P. M.).

Before I arrived, the patient, lying in bed, had two spells of tonic spasms. Upon examination I found slight stiffness of the muscles of the neck and jaws, pain in the wound itself, and also intense præcordial pain from the tonic spasms of the diaphragm; the countenance exhibited a very peculiar expression (risus sardonicus). The skin was wet, the bowels were confined, the temperature in the axilla was 99° F. Consciousness was completely preserved. The spasms were developed by any sources of irritation, and all the symptoms were so characteristic, with the addition of the history, that an error in thinking that I had to deal with a very acute case of traumatic tetanus was hardly possible.

The original source of infection was thoroughly cleaned by curetting and irrigation with strong solution of potassium permanganate first, and then, after hæmorrhage was checked, pure Marchand's hydrozone. Packing of the wound with iodoform gauze followed, also the dusting superficially with iodoform and calomel (half and half), and finally strict antiseptic dressing was applied. Internally, first a good dose of calomel was given and then rest and quiet in a dark room were ordered, and forty to fifty grains of bromide of potassium every two hours, besides chloroform during the spasms. It is hardly necessary to say that I pushed morphine nearly to the extreme limit of safety. I tried also to give stimulants and nourishing diet from the very start, but the spasms came and came with a very unpleasant regularity. The wound was made as nearly aseptic as possible again before I left, thinking of the antitoxic serum, which was advised in the careful Study of Tetanus and its Treatment, by Alexander Lambert, in this *Journal* some time ago.* I telegraphed at once to Chicago for the serum, and in twenty-four hours after that my patient received the first injection of a ten-cubic-centimetre dose of the serum—the dose being per diem about forty cubic centimetres—repeated once each day during the following five days.

The wound, beginning from the second of my visits, was disinfected, besides my usual procedure, as described above, with Gram's solution, and when sloughing showed itself, the same solution was deeply injected around the wound. The inhalations of chloroform to control the spasms were not stopped until the fourth day, when the spasms were checked altogether. Since that time, after more than two weeks, the symptoms are not developing, and the patient, three weeks after the occurrence of the wound, is doing well. The wound healed up from the bottom by granulation, scar remaining.

But now comes the most interesting point. After the first injection of the antitoxine over the original wound the duration of the spasms varied greatly and were only of a few moments' duration, with longer intervals, and the unpleasant periodicity first noticed as to the hour of the day was gone, but a swelling in the muscles of the jaw and an inflammation of the mucous membrane of the mouth, associated with glossitis, followed, being promoted, perhaps, by the debilitated condition of the general system of the patient. Upon microscopical examination the sporules and filaments of *Oïdium albicans* were found. Relief followed the use of sodium hyposulphite, saturated solution (ten drops every three hours), and the local application of the same solution. The swelling subsided after the twelfth day. The strength of the patient was kept up with iron, arsenic, quinine, and stimulants until he was well.

The combination of the old and the new treatment was so far successful. Now, the question is whether antitoxine alone could have saved the patient and if he would have had the same chances, provided that Nature had supported us in the same way.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Medicine, on Tuesday evening, the 9th inst., the programme included a paper by Dr. John H. Musser, of Philadelphia, entitled Renal Calculus, which was to be discussed by Dr. Charles G. Stockton and Dr. Herman Mynter.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 9th inst., a discussion on The Surgery of Typhoid Fever was to be opened by Dr. Hugh Taylor.

The New York Post-graduate Medical School.—Dr. Joseph Collins has been chosen successor to Dr. Charles L. Dana as professor of nervous and mental diseases.

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* Vol. lxv, p. 754.

SOME CONSIDERATIONS RELATIVE TO
THE THERAPEUTIC APPLICATION OF THE ELECTRICAL CURRENT.*

BY GEORGE E. BILL, M. D.,
HARRISBURG, PA.

WHEN one considers that heat, light, and electricity are interconvertible terms, are possibly different manifestations of the same primordial force—magnetism—the four separable or united or introactive through interplanetary ether, it becomes, to say the least, a very difficult matter to narrow this quaternity into the one term—electricity—and apply the latter to the field of medicine, without including the other three. Neither one of the four can be so used without considering the other three. They are all-pervasive throughout the universe and they all have to do with life in all its phases.

The human mind, however, the more easily recognizing the more material, is better cognizant of material contact by way of physical impressions upon the sensorium; and, therefore, the more explosive, electricity, is as yet more widely used and recognized in the profession.

No one has yet defined its meaning, no one can be so venturesome as to correctly define it, and its scope is as yet scarcely understood. Every one can speculate upon its entity, but no one has as yet fully comprehended it. It obeys certain known laws of polarity, which to the writer's mind affords a key to the solution of the axiom that "Nature abhors a vacuum"; and he ventures to believe, though perhaps with temerity, that the vacuum is really the negative polarity which attracts the inrushing positive element.

Electricity can not be studied, can not be understood, can not be applied to any recipient, without polar direction.

It seems to the writer, in view of the value of this fundamental fact of polarity, that a wider recognition of the essence of its basic meaning, attraction and repulsion, would do very much to illuminate and simplify the difficulties that beset the path of the medical electrician.

The problem is always, "Where shall the negative and where shall the positive electrode be placed upon the body plane of suffering? Shall the current expend its ultimate energy at the negative end or at the positive, or at a point midway?"

If we divide the body into anterior and posterior planes and remember that the former is governed by the latter, it would seem that a more rational and exact application of the force might be made to the patient. If we also remember that the negative attracts the positive, and so place the electrodes as to come within the meaning of this natural dictum, it would seem that many of our difficulties in electrical treatment would disappear, and sure, definite, and universal therapeutic results would follow its application to the patient.

Remembering the effects of the maximal and minimal magnetic earth currents upon health and disease, shall the time of the application of the current be properly selected with reference to this point?

Should not the action and function of the vegetative sympathetic be exhaustively studied with reference to the selection of polarity?

Shall the polarity be employed to reinforce the activity of the spinal system, the cerebellar, the cerebral, or depress the nervous energy therein?

Is there as yet established a scientific understanding of the difference in effect upon the economy of the various elements constituting a cell?

Does not a cell containing an exciting alkaline fluid behave differently upon the sensorium from one whose exciting fluid is an acid, in the way of mild or harsh impressional excitability?

If the current conveys various medicaments into and within the substance of the body, should an explanation thereof be not sought in a study of drug polarity?

Which pole will drive the medicament within, and which will not? or which pole shall be selected to convey the drug within?

Drugs may be electro-positive; therefore the positive electrode repels them into and within the body, to be therein attracted toward and by the negative polarity. An electro-negative drug may need to be applied at the negative electrode on the same universal principle of polarity—"unlike polarities attract, like repel."

Can not pole-saturation of drugs minimize the explosive energy of the current, thereby being made more generally grateful to the patient? Must we always elect the common-salt solution with which to saturate the electrode, or shall we use diversity, according to need?

Is there not a wide difference in the behavior of electrodes themselves? Shall a copper, brass, zinc, iron, carbon, nickel, gold, silver, or other element constitute the electrode, positive or negative, or both? What modification upon the current does electrodal selection play?

In view of the special work to be done, or the result to be accomplished, shall there not always be a proper electrodal selection?

What condition of the economy demands the sinusoidal, the galvanic, the static, the primary or secondary faradaic, or the latter plus the magnet, or the combination of all of them?

Is there a morbid condition requiring a stimulating or a depressing current?

Have we reached the ultimate perfection of the faradaic machine in the final adoption of the iron units, or, shall not they who have the means and the opportunity experiment with other elements possessing electrical potentiality?

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* Read by invitation before the American Electrotherapeutic Association, at Harrisburg, Pa., September 21, 1897.

Who shall say that the drug acts within the economy save by reason of its malefic or benefic polarity thereto?

Osmosis might explain somatic drug appropriation, but should not the elements of attraction and repulsion enter into an explanatory inquiry into it? Are they not causative thereof?

If health, as it would seem, be dependent on an equilibrium in nerve action between cerebral and sympathetic, and disease be a result of a non-equilibrium thereof, can there not, peradventure, be scientifically established a cerebral polarity or a sympathetic polarity—and which is positive and which negative in Nature?

Determining this, then, which battery polarity should be employed in a given morbid case? Or shall we continue to use haphazard the so-called labile or stabile method as a guide, because some observer happened to have good results thereby?

By a comparative study of the attitude and physiognomy of suffering and the equilibrium of normality in body expression, can there not be established planes of somatic change indicative of a departure from the normal standard? Then, mapping out these planes, why not apply the needful current in such a manner as will restore the normal expression thereof?

Only the ignorance of conservatism, only the narrow path of undeviating experience, arrogates to itself finality in the progress of therapeusis.

There are, it is believed, immense possibilities in the electric, magnetic, and luxial therapeusis of the future. It is but fair to presume, it is not hopeless to believe, that the patient, careful, conscientious student in the electric thought of the age, now blessing humanity, shall ultimately behold the light; for his investigations will slowly but surely revert his reverent attention to that first physical cause of physicism, revealed in the Word of all religions, of all races, of all climes. Remembering that the atmosphere of the earth is composed of elements in probable electric equilibrium with each other, mayhap the cold, magnetic rays of the sun, impinging thereon with enormous force, start the wheel within the wheel, producing the thermal and electric units of sentient and organic life.

As polarity determines light and its congener, darkness, through probable ultra-rays, possibly there can be found a scientific *truth*, explanatory of all forces, in that wondrously benignant fiat of the Almighty—"Let there be light."

253 North Street.

The Society of Medical Jurisprudence.—At the one hundred-and-twenty-ninth regular meeting, on Monday evening, the 8th inst., Dr. E. C. von Ramdohr was to read a paper entitled Midwifery and Midwife.

A CASE OF ADENO-CARCINOMA OF THE NOSE.*

By G. A. LELAND, A. M., M. D.,
BOSTON.

The announcement on the programme of the papers of Dr. Wright and Dr. Hopkins suggested to me that the following case, which came under my observation in hospital practice, might be of interest; and at the latter's request it is here submitted. It will be noted that the very accurate account of the autopsy by Dr. Councilman shows three points brought out by Dr. Wright—viz., the primary adenoma, its transition to carcinoma, and a tendency in one part to papilloma.

Ellen W., a rather frail, undersized woman of fifty years, was admitted to the Boston City Hospital about the middle of October, 1895. Has always had good health until present trouble. About a year ago nose began to stop up on right side, especially at night; obstruction gradually increased until it was complete. The left side became involved soon after the right, but she is even now able to force some air through left naris. No pain until three months ago, since when it is described as neuralgic in nose and over right side of head. Epistaxis has occurred six or eight times since onset, at times quite copious. About middle of July had more or less of the growth removed at the out-patient department. It has grown rapidly since.†

Examination.—Bridge of nose markedly flattened and broadened, the nasal bones seemingly lifted upward and loosened so as to give a soft feel to finger; no crepitus; skin over bridge reddened, more deeply in centre. In inner canthus of right orbit a swelling with a fistula discharging pus—the suppurating lacrymal sac, or an abscess which has broken through the ethmoid bone into the orbit. The right eye is pushed to right a small fraction of an inch, and slightly bulging. Nares filled with a firm, grayish-white granular polypoid mass, right more than left. The same kind of tumor is seen by posterior rhinoscopy to nearly fill the nasopharynx, more on right than left. A watery, muco-purulent fluid continually comes from nares, at times sanguinolent. The mass bleeds easily if wounded.

12th.—A piece removed for pathologist; considerable hæmorrhage; controlled by iodoform-gauze packing.

Dr. Councilman reports probable carcinoma, but awaits more thorough microscopic examination after hardening.

November 23d.—About five weeks after admission. Patient is up and about; complains of very little pain; several hæmorrhages have demanded attention, controlled by packing, which is kept almost continually in the nares. To-day is noted a slight increase in size of right superior maxillary region, especially outward under zygoma.

December 2d.—Patient has been losing strength for a week, and confined to bed. Marked cellulitis developed under right zygoma six days ago, and right cheek is now very tender and somewhat reddened; no fluctuation. About the same time discharge from lacrymal region became somewhat hæmorrhagic and has increased. Three days ago the right half of the roof of the mouth became infiltrated and thickened, and very tender—probably a submucous cellulitis. Mouth is very sore, and only liquid nourishment can be taken.

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* Read before the American Laryngological Association at its nineteenth annual congress.

† From Out-patient Department Record Book. "July 26, '95. Ellen W. 50 yrs. W. Specific rhinitis and caries of septum. Curette. Potas. iod."

15th.—Rapidly becoming weaker; swelling has increased so that right cheek protrudes as large as a small orange. Discharge from nose and eye increased. Still pain is not prominently complained of.

24th.—Death ensued from gradual failure of vital function.

Autopsy, December 27, 1895.—From records of pathological department, by Dr. Councilman.

Glabella driven forward. Nose flattened and broadened; right eye somewhat protruded; right cheek swollen.

Skull of ordinary thickness; meninges and brain normal. On stripping off dura from orbital plates a small amount of pus welled up. Cribriform process was eroded, and in place of it a reddish granular-looking purulent mass appeared. Skin of face was dissected off, and bone split in the median line. The entire nasal passages extending back into the pharynx were filled with a reddish granular tumor mass. This appeared to spring from all the processes of the ethmoid bone, which was entirely destroyed. The tumor was also adherent to and grown into the cartilaginous sæptum. The tumor was infiltrated with pus, and there was an opening through the outer wall of the antrum into the cheek, and pus infiltration of the connective tissue and muscle throughout, this infiltration extending up to the back of the orbit on the right side, involving the left to a much smaller extent.

Lungs free from adhesions; posterior lower lobes congested and slightly œdematous. On pleural surface of lung were several small, flat, grayish metastatic nodules of the same character as the primary growth. Right pulmonary artery contained a loose fibrinous embolus, with fresh fibrinous masses adherent to it.

Liver, spleen, and kidneys amyloid. In the left kidney the renal vein was entirely occluded by a thrombus, which projected into the vena cava and was continuous with a thrombus on the right side coming from the renal vein and partly occluding it; this united thrombus was continued upward in the vena cava, was adherent to the posterior wall, and had fresh clots upon it.

Anatomical Diagnosis.—Tumor of ethmoid. General amyloid infiltration.

Microscopic Examination.—Cover slides from pus from ethmoid cells showed many short chains of streptococci and many bacilli.

Bacteriological Examination.—Cultures from pus from ethmoid cells, heart's blood, liver, kidney, lungs, spleen showed many colonies of streptococci—prevailing organism, streptococcus.

Bacteriological Diagnosis.—General infection with *Streptococcus pyogenes.*

Microscopic examination of tumor in various places showed that it was an adenoma with some tendency to carcinoma, but the most of the tumor had a purely adenomatous type. The cells composing the tumor were long and spindle-shaped, and where it was best preserved they were covered with cilia; in other portions the cells were swollen and the ciliæ were not evident. There was a very slight degree of purulent infiltration of the tumor in places. In one of the sections on the edge there was a very remarkable formation of long papillæ from which the epithelium had fallen off in many places; the blood-vessels of these papillæ were dilated and filled with blood, and they were so long that they could be seen on the section with the naked eye.

FATAL POISONING BY COCCULUS SUBEROSUS.

By G. E. SWIFT, M. D.,
HUDSON, N. Y.

About 11.15 a. m., September 19th, I received a call to a patient about half a mile from my office. On reaching the house I found a woman in furious convulsions (tetanic); rapid, labored respiration; frothing at the mouth; minutely contracted pupils; general heat of body somewhat increased. A few questions elicited from the daughter the information that her mother had called her to get her some water. Noticing the expression of her mother's face, the daughter questioned her, and the last words the mother uttered before a convulsion seized her were: "I took some of that bottle of yours." The bottles were shown me, and one contained aqua ammoniæ, labeled "Poison"; the other, unlabeled, contained a chocolate-colored fluid with a sediment, which the husband informed me was cocculus suberosus and alcohol.

As there were no symptoms of ammonia poisoning I treated her for picrotoxine poisoning, but unsuccessfully, the patient dying twenty minutes after my arrival. The woman had taken the poison in mistake. Every year, on the approach of cold weather, it was her custom to make a mixture of snakeroot and whisky and use it for coughs and colds.

During his wife's absence—she had been visiting out of town from Wednesday till Saturday evening, September 18th—the husband had discovered pediculi capitis on his boy. He purchased the cocculus and alcohol and used the fluid on the boy's head, afterward placing the bottle in the kitchen closet. Sunday morning, while doing her housework, the wife noticed the bottle and, thinking it was snakeroot and whisky, poured some into a glass and drank it. She died therefrom in less than three quarters of an hour.

The autopsy, at 3.30 p. m., showed a well-nourished female; rigor mortis marked; general cyanosis of skin, more marked in most dependent parts of body. Lungs blanched and mottled and filled with air. Heart, right side flaccid and containing a small amount of blood; left side distended and as hard as a solid body. On gross appearance other organs normal. The stomach, somewhat hypcræmic, contained about two ounces of fluid and two or three particles of meat and potato. She had had breakfast at 9 a. m.

EMPYEMA IN CHILDREN.*

By PHILIP F. BARBOUR, M. D.,
PROFESSOR OF CHEMISTRY AND CLINICAL LECTURER ON DISEASES OF CHILDREN IN THE HOSPITAL COLLEGE OF MEDICINE, LOUISVILLE, KY.

Empyema is well recognized as one of the diseases of adults, and its symptomatology, diagnosis, and treatment have assumed definite outlines. In children the clinical picture is not so clearly defined, and many cases pass unrecognized or fail of proper treatment. The ætiology, symptomatology, diagnosis, prognosis, and treatment are different in many respects in children and in adults.

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* Read by title before the Mitchell District Medical Society, West Baden, Indiana, July 8, 1897.

Of the causes of empyema, pneumonia is by far the most common, being responsible, according to Holt, for over ninety per cent. of the cases. The empyema seems to develop immediately upon the pneumonia, or pleuropneumonia, and does not, as a rule, occur from an intermediate chronic pleurisy, for pleurisy is very rare in children under five years of age. Tuberculosis, pyæmia, necrosed rib or vertebra, trauma, abscesses below and impinging upon the diaphragm, general lowered vitality, all furnish their respective quota of cases. Tuberculosis is said to be an extremely rare cause in childhood, while in adult life it is responsible for the majority of attacks.

The germs, then, which are the more frequently found in the empyema of children are the *Micrococcus lanceolatus,* which is responsible for the great majority of cases; the *Streptococcus pyogenes* and the staphylococcus, occurring in the empyemas following the infectious diseases, or from pyæmic infection; and the *Bacillus tuberculosis,* the rarest of the germs found.

The clinical history of these cases usually points to an antecedent pneumonia or broncho-pneumonia. The empyema may begin abruptly with high fever, cough, and other pulmonary symptoms, or may be very insidious in its onset; but after pus has been formed in the pleural cavity the general symptoms of loss of strength and appetite, pallid countenance, some elevation of temperature, which may, though rarely, be excessive, some cough and dyspnœa, and finally clubbing of the fingers and cyanosis are common to most cases.

The diagnosis of empyema in the adult is usually an easy matter, especially if there is much pus in the pleural cavity. It is not recognized with equal facility in infants and children because physicians as a rule are not so certain of the normal boundaries of the lungs in children as they are in adults. The heart, thymus gland, and other contents of the mediastinal spaces occupy relatively a larger portion of the chest in the young than in the adult, while the breath sounds are of a coarser character. Then the fluid is not so large in quantity, and the pressure symptoms are not so marked in the child. Of course, the physical signs of an effusion into the pleural cavity of the child resemble those obtained in similar conditions in the adult, but there are some differences to be noted. As a rule, the affected side is larger, but less mobile; the intercostal spaces are bulging; the apex beat of the heart is moved more or less toward the opposite side; there is flatness corresponding to the amount of effusion; vocal fremitus is absent below the level of the liquid, and on auscultation there is an absence of all breath sounds. But it is by no means rare in the empyema of childhood to get bronchial breathing and bronchophony, even through the liquid, but they have a far-away sound, not as if just under the ear, as we usually hear them in pneumonia. It is sometimes difficult to distinguish empyema from an unresolved pneumonia, but flatness on percussion, varying with position, displaced heart, diminished or absent fremitus, and the distant and feeble bronchial breathing, with absence of any râles, should make the diagnosis easy. Then, unresolved pneumonia is a very, very rare disease, while empyema is not so uncommon.

One source of error frequently met with in empyema is some adhesion between the two pleural surfaces. The fluid may be all around and above the adhesion, but the adhesion acts as a telephone wire to transmit sounds from the root of the lung to the ear. If this condition be kept in mind there need be no mistake in diagnosis.

To diagnosticate between a serous and a purulent effusion is impossible, except by aspirating some of the liquid and examining it. This is a simple operation and should be performed in all cases of doubt.

The condition which resembles empyema the most closely is a chronic pleuritic inflammation, with deposit of fibrin not only in the parietal but also in the visceral pleura. We find here a diminution in the breath sounds, flatness on percussion, diminished vocal fremitus, etc., but there is no displacement of the apex beat of the heart, and the level of the flatness is not changed by position. Encapsulated foci of empyema are not readily recognized, and can be diagnosticated definitely only by exploratory incision or aspiration.

The prognosis is usually very favorable in children, much more so than in the adult, but depends entirely upon the character of the germ which is found in the effusion. The science of bacteriology has made possible marvelous advancement. In no respect has it accomplished more good than in demonstrating the unity of many diseases the differing symptoms of which have been determined by the environment of the germ as much as by the germ itself. So the multiple manifestations of the potency of the *Pneumococcus lanceolatus* in causing pneumonia, cerebro-spinal or acute meningitis, or mastoid abscesses, extends also to the ætiology of empyema. But in empyema the presence of the pneumococcus is of the most favorable prognostic value. It renders the treatment very simple, and promises to the patient an almost certain speedy convalescence. It is on account of the great frequency with which the pneumococcus is found in empyema that the children do so well after any kind of operation for its relief. When the pneumococcus is contaminated with the streptococcus or staphylococcus, or either of these is found alone, the prognosis is much more grave. The character of the operative measures should be altered to meet the condition. The convalescence is much more prolonged and tardy. With the tubercle bacillus present there is necessarily a very guarded prognosis, as the little ones nearly always die more or less rapidly from its effects. The difficulty of locating the focus of the tubercle and then of eliminating it precludes a permanently favorable outcome to the case. The tubercle bacillus is probably found in the majority of adult cases of empyema and adds to the gravity of the condition in them.

The treatment is necessarily surgical, but even here there is a difference in the method of operation dependent upon the cause and the age of the patient. The operative procedures are, first, simple aspiration; second, simple incision; third, resection of a rib. There are a number of cases on record of cures resulting from simple aspiration. These are undoubtedly cases where the pneumococcus alone is found as the cause of the empyema. One author maintains that these cases get well by a rupture of the empyema into a bronchus, which completes the result accomplished by aspiration. But such authorities as Holt and Osler assert that simple aspiration is efficient and sufficient in many cases. In other forms of infection one aspiration is of very little value, and repeated aspirations offer no advantages over simple incision. The majority of pædiatricians are in favor of simple incision, while surgeons, as a rule, advise resection of a rib. The advantages of simple incision are that it can be done under a local anæsthetic, the shock of the operation is infinitesimal, and from the large number of cases of pure pneumococcus infection no other procedure is necessary. The shock of the operation and the length of time necessary for repair after resection of the rib make it a dangerous resort. Where the ribs are so near together as to prevent proper drainage after simple incision, then resection becomes necessary, and about an inch of rib should be removed after having peeled off the periosteum carefully so as to get new bone formation. There is danger, however, of the rib becoming infected and adding to the difficulties of the child. It is advised, moreover, in tuberculous or streptococcus infection that the pleural cavity be washed out with normal salt solution or weak boric-acid solution. The further details of the operation will naturally suggest themselves to each one.

After the removal of the pus, some attempt must be made to produce expansion of the lungs to their normal proportions. This is effected by the coughing and crying which the child undergoes during or after the operation. If the adhesions are firm, it is possible sometimes to loosen them during the operation. Afterward the child is taught to blow soap bubbles or toy balloons, so as to put some pressure on the lung.

Nature often attempts the relief of this condition and discharges the pus somewhere near the nipple or into a bronchus, or into the abdominal cavity, or posteriorly as a psoas abscess. It is a bad plan to wait for Nature to relieve your patient.

The medicinal treatment embraces the use of tonics of all kinds, such as may be especially indicated for each case, and such hygienic and other suggestions as properly come up.

It has frequently happened that the fibrous adhesions over the lungs become so firmly organized that it is impossible for the lungs to expand and fill the pleural cavity, and there is depression of the thorax and lateral scoliosis. Then the lung of the opposite side has to become somewhat emphysematous in order to help fill the vacuum. The heart and large blood-vessels are placed at a disadvantage in their position. Consequently it is necessary to relieve this vacuum. Estlander's operation of multiple resection of the ribs offers the best results in such cases, though it must be noted here again that such operative interference is very, very rarely indicated in childhood.

FRACTURE OF THE NECK OF THE FEMUR IN A WOMAN SEVENTY-THREE YEARS OF AGE.

COMPLETE RECOVERY, WITH GOOD USE OF THE LEG.

By E. ALEXANDER HATTON, M. D.,
PORTSMOUTH, VA.

On Sunday, March 8, 1896, I was called to see Mrs. C., aged seventy-three years, much emaciated, being about five feet three inches in height and only weighing ninety-five pounds. She had fallen while entering a church door, and complained of severe pain at the left hip joint and loss of motion in the left thigh. She was placed on a stretcher and carried to her residence, where, upon examination, I found an intracapsular fracture of the neck of the left femur, with no impaction. She was placed on her back in a fracture bed, and her leg put in good position. Buck's extension was applied, and two sand bags were used, one on the inner and one on the outer side of the leg, the latter extending up to her waist. She remained in this position for six weeks, at the end of which time Buck's extension was removed, as it was found the fracture had entirely united. In the course of three weeks more she was able to walk with the assistance of crutches. She now walks well without assistance, and only has about half an inch shortening. This is an interesting case to me, and probably to others, since the woman was so emaciated and old that there seemed scarcely any vitality in her, and still she recovered with good use of her leg in a very short time.

AN UNUSUAL WEIGHT FOR A CHILD AT TERM.

By J. W. HARTIGAN, A. M., M. D., F. R. M. S., etc.,
PROFESSOR OF HUMAN AND COMPARATIVE ANATOMY,
WEST VIRGINIA UNIVERSITY, MORGANTOWN, WEST VA.

After an exhaustive examination of all the literature at my command on the weight of the fœtus at term, I have decided to report what seems to me an unusual case.

According to the late Dr. Lusk, Scanzoni found an average of nearly seven pounds, for both sexes, in nine thousand births. The average weight of two hundred children born in Bellevue Hospital, according to Dr.

Lusk, was seven pounds and two thirds for both sexes, the heaviest child weighing eleven pounds. Waller reports the forceps extraction of a child weighing fifteen pounds and fifteen ounces.

In June I was called to see a young woman in labor, aged twenty-one years; weight, a hundred and twenty pounds; primipara. The child seemed unusually large. I had the father, a very small man, weigh it. He reported eighteen pounds as its weight. I expressed surprise and got another pair of scales and weighed it myself in the presence of another physician. It weighed on both scales eighteen pounds and four ounces.

The parents were both small and both young. The labor was rather a quick one, and the birth not so hard as I have often seen with much smaller children.

The novel features of the case, aside from the weight of the child, are the ages and sizes of the parents.

Therapeutical Notes.

The Treatment of Ciliary Alopecia due to Syphilis.—Monin (cited in the *Indépendance médicale* for September 22d) recommends the following treatment of falling of the eyelashes due to syphilis:

1. ℞ Glycerin	200 parts;
Extract of krameria	15 "
Calcium iodide	10 "
Iodine	1 part.

M. S.: A teaspoonful every morning, in half a glass of water.

2. A pill containing three grains and a half of extract of juglans and thirty one-hundredths of a grain of mercury protiodide to be taken twice a day.

3. ℞ Pilocarpine nitrate	¾ of a grain;
White precipitate	3½ grains;
Vaseline	225 "

M. S.: A piece as large as a grain of wheat to be rubbed on the edges of the lids, the lids being closed, every night and morning.

A Mixture for Habitual Constipation in Children.—The Quebec *Revue médicale* attributes the following formula to Jules Simon:

℞ Tincture of cascarilla, Tincture of rhubarb, Tincture of canella, Tincture of calumba, Tincture of gentian,	each 2 parts;
Tincture of nux vomica	1 part.

M. S.: Ten drops, in a little water, before each meal.

A Prescription for Gastric Acidity.—Boas (cited in the *Journal de médecine de Paris* for October 3d) recommends the following:

℞ Sodium sulphate	30 parts;
Potassium sulphate	5 "
Sodium chlorate	30 "
Sodium carbonate	25 "
Sodium biborate	10 "

M. S.: Half a teaspoonful, in half a glass of warm water, three times a day, two hours before eating.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, NOVEMBER 13, 1897.

DRUG NAMES AND PRESCRIPTION-WRITING.

In the November number of the *Druggists' Circular and Chemical Gazette* Mr. Seward W. Williams, of East Orange, N. J., exposes some of the glaring errors of which prescribers and medical writers are guilty, and hints at the dangers that such errors may lead to. He is kind enough to say of this journal: "The *New York Medical Journal* merits recognition as one of the very few medical periodicals which take pains to have their chemical nomenclature strictly up to date, and it seems a pity that its contemporaries do not follow its example a little better."

Dismissing with proper unconcern the dicta of some incompetent critic concerning certain common expressions, Mr. Williams asks "Why not devote some attention to terms used, or abused, in designating what powerful drugs shall be dispensed when life hangs in the balance?" The context, he says, is commonly relied upon by the dispenser in determining the correct interpretation of the terms used in prescriptions, and he cites the following formula from Proctor's *Practical Pharmacy:*

"℞ Hydr. chlor	gr. xx.
"Tinc. hyoscy	ʒ j.
"Aquæ	ʒ ix.

"M. Draught to be taken at bedtime."

He is abundantly justified in the following comment on the formula: "Now, which chloride of mercury is intended? The context shows plainly that neither is wanted, but chloral hydrate. Is it not all wrong that human life should be thus trifled with?" On this point, we may add that we continually meet in the pages of our exchanges with prescriptions that at the first glance we think would be useful to our own readers, but feel constrained not to transfer them to our columns, owing to their bearing evidence of inaccuracy. This is a weekly experience, and the fact is not at all creditable to medical editing. For our own part, we long ago gave up the use of abbreviated names of drugs. Abbreviating saves time, to be sure—that is, it saves the writer's time—but what an inroad it makes on the reader's time, and to what sad consequences it may lead!

Mr. Williams does not express approval of the so-called reform that changes iodine to "iodin," iodide to "iodid," etc., unless approbation may lurk in his saying "This is all very well if we are only left the distinctive termination for alkaloids." We hope he does not approve of those changes. The termination -ine, he says, should certainly be retained for alkaloids, as distinguishing them from principles the names of which end in -in. He asks: "Is there not danger, too, of serious confusion in localities where certain eclectic remedies have long been prescribed under names differing from those of alkaloids only by the final 'e'? For example, what does 'hydrastin' mean in Cincinnati?"

In this journal the effort is made to bear in mind constantly the distinction between a hydrobromide and a hydrobromate, for example, and we are glad to see in Mr. Williams's article a clear exposition of the difference. We think there is reason to expect that the present confusion will be cleared up in the next revision of the United States Pharmacopœia. Mr. Williams has done a good work. It is natural that in such a matter as this the first move should come from the pharmacists, for they are nearer the pure chemists than physicians are, but we hope our own profession will see the need of the preciseness of expression for which Mr. Williams argues.

NEW FORMS OF TREATMENT FOR PURPURA.

In the *Gazette hebdomadaire de médecine et de chirurgie* for October 17th M. Pigot, an interne of the Saint-Denis Hospital, relates the case of a patient who was received into Dr. Feltz's service in such a weak condition that no doubt was entertained of a fatal issue. Her whole body was covered with hæmorrhagic spots, especially the upper limbs. Their size ranged from that of a lentil to that of a fifty-centime piece. The gums were swollen and softened and bled freely, particularly where there were unsound teeth. The buccal mucous membrane also was affected, being swollen and beset with ecchymoses. The fleshy granulations characteristic of scurvy were to be seen. The patient was losing blood so abundantly that she had to use two handkerchiefs during the first night. She had diarrhœa, and the dejections contained a good deal of blood. She complained of a painful sensation of burning in the epigastric region, and her breath was fœtid. On auscultation of the lungs, a small cavity was discovered on the left side. The patient was coughing and expectorating excessively. The liver was slightly enlarged; the spleen was normal; the temperature was 102.2° F.; there was no albumin in the urine. It was learned that the purpuric spots had made their appearance fifteen days before, but that the gingivo-buccal hæmorrhage had come on suddenly only two days before.

The patient was at once put upon the use of Dr. Feltz's ordinary treatment for such cases, consisting of the administration of iron perchloride, ergotine, and lemon juice, together with frequent rinsing of the mouth with a solution of potassium chlorate. At the end of two days there was no improvement; the disease was only getting worse. Two hundred and fifty cubic centimetres of artificial serum were then injected subcutaneously. In twenty-four hours there was a change. The patient left her bed; the hæmorrhages were considerably diminished; the state of the gums was notably improved; the fleshy granulations were receding; the stools had become almost normal; and the purpuric spots were fading. On the following day another injection of the same amount was given, and the improvement continued. On the third day another injection was given, and that sufficed to effect a cure. The gums resumed their rosy hue, the stools became normal again, and the patient was getting her strength back; the temperature, however, remained elevated, but this the author attributes to the pulmonary tuberculous disease, and not to the purpura.

M. Pigot lays stress upon the rapidity of the cure in this case; in forty-eight hours, he says, the patient underwent a sort of resurrection. As to the *modus operandi* of the treatment, it may have exerted a vasoconstrictive action by virtue of its mere fortifying effect, but he is inclined to think that it so changed the composition of the blood as to favor hæmatopoiesis. He suggests that hæmophilia, having more than one point in common with purpura, might be influenced favorably by injections of artificial serum.

In 1895 Alexien employed bone marrow with success in a case of purpura, and his example has lately been followed by Jaunin (*Revue médicale de la Suisse romande*, June 20th; *Presse médicale*, October 16th). The patient, a man twenty-three years old, had grave infectious purpura with multiple hæmorrhages, including hæmaturia and epistaxis. Many remedies had been tried, but without much result. Jaunin prescribed fresh calf's marrow, beaten in warm water and strained, two or three tablespoonfuls daily. For eight or ten days there was such improvement that a cure appeared to be at hand, when, unfortunately, the patient died in collapse.

The author thinks that bone marrow is capable of exerting a sort of specific action in purpura, diminishing the tendency to hæmorrhages and increasing the percentage of hæmoglobin very rapidly. It should be employed early, he says, even as a preventive, in all hæmorrhagic affections, but not to the exclusion of other remedies.

MINOR PARAGRAPHS.

A METHOD OF DISINFECTING THE HANDS.

Jayle and Desfosses (*Revue d'hygiène et de police sanitaire,* September 20th; *Lyon médical,* October 17th) recommend the following method, said to have been adopted by many surgeons: Plunge the fingers into soft soap and cause the soap to penetrate into all the furrows; cleanse these furrows with some moderately yielding material, such as an ivory, wood, or paper point; wash the hands and arms in hot water, using a brush and Marseilles soap or a piece of pumice stone; repeat this twice; rinse the hands and arms with pure water, then rub them and brush the nails with alcohol; finally, keep the hands and arms in a one-to-one-thousand solution of corrosive sublimate for three minutes, and do not dry them. When the hands have been exposed to soiling with particularly infectious germs, as in a surgical operation or a post-mortem examination, the washing with alcohol should be preceded by immersion in a two-to-a-thousand solution of potassium permanganate; the brown stain may be made to disappear by the application of a saturated solution of sodium bisulphate.

A SLIGHT INACCURACY CONCERNING THE LATE DR. ALONZO CLARK.

Last Sunday's *Sun* contained two columns of moderately entertaining reminiscences entitled Doctors of Old New York. We long ago ceased to look for accuracy or even common sense in newspaper medicine, but we did expect truthfulness in matters of mere narrative having no bearing on politics. In the article mentioned there is an amusing conversation said to have taken place between Dr. Clark and his son! It is well known that the great lecturer died a bachelor.

INEQUALITY OF THE PUPILS IN CARCINOMA OF THE ŒSOPHAGUS.

Hitzig, of Zürich (*Deutsche medicinische Wochenschrift,* 1897, Nos. 36 and 37; *Wiener klinische Rundschau,* October 10, 1897), reports that he has observed differences in the pupils in six out of thirty-seven cases of carcinoma of the œsophagus. In one case the right pupil was the smaller of the two, and the autopsy showed a large carcinomatous gland on the right side of the œsophagus, encircling the vessels and nerves. In the five other cases it was the left pupil that was contracted, and this is attributed to deviation of the œsophagus to the left. The phenomenon is apparently due to pressure on the sympathetic nerve.

POST-PARTUM EVENTRATION.

At a recent meeting of the Paris Obstetrical and Gynæcological Society (*Indépendance médicale,* October 20th) M. Doléris reported the case of a young girl who, to conceal her condition of pregnancy, laced so tight as to force her belly down on to her thighs. Her labor was normal, but involution was unsatisfactory and a very pronounced eventration was observed. M. Doléris excised a broad strip of the abdominal integument and stitched the recti muscles together. The result was a perfect cure.

WOMEN'S CLOTHING AND THE RÖNTGEN RAYS.

The *Revue médicale* (cited in the *Écho médical du Nord* for October 17th) states that an English ladies' tailor announces that he is the sole possessor of a fabric which resists the passage of the Röntgen rays, so that his fair patronesses may be sure that their charms can not be disclosed to the curious without their consent.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 9, 1897:

DISEASES.	Week ending Nov. 2.		Week ending Nov. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	27	7	28	12
Scarlet fever	87	7	154	8
Cerebro-spinal meningitis	0	0	0	0
Measles	147	6	205	12
Diphtheria	119	23	150	24
Croup	1	3	1	3
Tuberculosis	179	104	180	97

Information for Applicants for Appointment as Police Surgeons.—The civil-service commission of the city of Brooklyn gives notice that applicants will be examined at Public School No. 15, Third Avenue, corner of State Street, at seven o'clock, on Friday evening, November 19th. Applications should be filed with the commission before the date on which the examination will take place. Application blanks and a copy of the rules relating to the duties of police surgeons will be furnished by the secretary on request. Applicants will be examined as to their experience and their practical and technical knowledge, and will be required to furnish testimonials from persons who are competent to vouch for their character and ability. The new civil-service law, Chapter 428 of the Laws of 1897, requires the commission to hold two examinations—one to ascertain "merit" and the other to ascertain "fitness." Applicants who pass the first examination for merit will be notified to appear at a subsequent examination to ascertain their fitness. The second examination will be oral.

The surgeons in the police department receive a salary of $1,500 per annum. There are now five surgeons in the department. After January 1, 1898, under the administration of the greater city, the charter provides for the appointment of "surgeons of police, not exceeding forty in number, one of whom shall be chief surgeon." It will therefore be necessary for the Greater New York police commissioners to appoint at least four additional surgeons, who shall be assigned to work in the Borough of Brooklyn. The salary of a police surgeon in the greater city will be $3,000 per annum.

The last paragraph of Section 1536 of the general provisions of the charter reads as follows: "The incumbents of positions abolished or made unnecessary by this act shall be preferred for appointment to positions demanding their service. For this purpose the civil-service commissioners are directed, as far as practicable, to place the names of such persons on the top of eligible lists, and to give them on said lists the preference after veterans. The civil-service regulations in force at the time this act takes effect in the various parts of the city of New York, as constituted by this act, and all eligible lists created thereunder in said parts of the city respectively, shall continue in full force and effect until new regulations shall have been adopted in accordance with the provisions of this act, and new eligible lists made in accordance with such regulations."

Applications should be sent to the secretary of the commission, Mr. Edward B. Lent, room 1, City Hall, Brooklyn.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending November 6, 1897:

Yellow Fever—United States.

Mobile, Ala.	Oct. 30–Nov. 5	74 cases,	5 deaths.
Montgomery, Ala	Oct. 30–Nov. 3	25 "	3 "
Selma, Ala.	Oct. 30–Nov. 4	1 case,	1 death.
Wagar, Ala.	To Nov. 3	45 cases,	3 deaths.
Whistler, Ala	To Nov. 1	25 "	2 "
Baton Rouge, La.	Oct. 22–31	3 "	1 death.
New Orleans, La.	Oct. 30–Nov. 5	266 "	54 deaths.
Bay St. Louis, Miss.	Oct. 29–Nov. 5	42 "	2 "
Cayuga, Miss	Nov. 5	1 case.	
Clinton, Miss.	Oct. 31	2 cases.	
County Farm, Miss	Nov. 5	1 case.	
Durant, Miss	Nov. 1	1 "	1 death.
Edwards, Miss.	Oct. 30–Nov. 4	4 cases.	
McHenry, Miss	Nov. 2	1 case.	
Nitta Yuma, Miss	Oct. 30–Nov. 4	9 cases.	
Pascagoula, Miss	Oct. 30–Nov. 3	6 "	
Scranton, Miss.	Oct. 30–Nov. 4	35 "	3 deaths.
West Pascagoula, Miss.	Nov. 2, 3	8 "	
Memphis, Tenn.	Oct. 30–Nov. 5	19 "	10 "

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	Sept. 25–Oct. 2	1 case.	
Cardenas, Cuba	Oct. 16–23		2 deaths.
Cienfuegos, Cuba	Oct. 17–24		1 death.
Havana. Cuba	Oct. 21–28		14 deaths.
Manzanillo, Cuba	Oct. 15–22		3 "
Sagua la Grande, Cuba	Oct. 9–23	102 cases,	3 "
Santiago de Cuba	Oct. 9–23		15 "
Kingston, Jamaica	Oct. 9–16	1 case.	
Manchester, Jamaica	Oct. 9–16	1 "	1 death.
Portland, Jamaica	Oct. 9–16	1 "	
Port Royal, Jamaica	Oct. 9–16	3 cases,	2 deaths.
St. Andrew, Jamaica	Oct. 9–16	1 case.	

Small-pox—United States.

New Orleans, La.	Oct. 16–23	1 case.	
Bay City, Mich	Oct. 23	3 cases.	

Small-pox—Foreign.

Rio de Janeiro, Brazil	Sept. 25–Oct. 2	19 cases.	
Santos, Brazil	Sept. 18–25	1 case.	
Sagua la Grande, Cuba	Oct. 9–23	67 cases,	4 deaths.
Gibraltar	Oct. 10–17	1 case.	
Moscow, Russia	Oct. 2–9	1 "	1 death.
Odessa, Russia	Oct. 9–16	1 "	1 "
St. Petersburg, Russia	Oct. 9–16	6 cases.	
Warsaw, Russia	Oct. 9–16		9 deaths.
Madrid, Spain	Oct. 12–19		2 "

Cholera—Foreign.

Bombay, India	Sept. 28–Oct. 5		32 deaths.
Madras, India	Sept. 25–Oct. 1		3 "

Plague—Foreign.

Bombay, India	Sept. 28–Oct. 5		44 deaths.

The Harlem Medical Association.—The time of meeting has been changed to the second Monday of each month (except July, August, and September), and the place to Arthur Hall.

The Columbus Hospital.—We learn that Dr. Richard K. Macalester has been appointed neurologist to the hospital.

Changes of Address.—Dr. George W. Crary, to No. 22 West Fifty-fifth Street, New York; Dr. E. O. Crossman, from Lisbon, N. H., to Markleton, Pennsylvania; Dr. W. Francis Honan, to the Sherman Square Hotel, Grand Boulevard and Seventy-first Street, New York; Dr. Andrew K. Smith, U. S. Army (retired), to No. 400 West End Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 31 to November 6, 1897:*

WOODSON, ROBERT S., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect when his services can be spared.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending November 6, 1897:*

ALFRED, ADRIAN R., Passed Assistant Surgeon. Detached from waiting orders at his home, Jeddo, Michigan, and ordered to the Marine Recruiting Rendezvous, San Francisco, California.

COSTIGAN, G. D., Assistant Surgeon. Detached from the U. S. Steamer Lancaster and ordered to the U. S. Steamer Indiana.

FITZSIMONS, P., Surgeon. Ordered to duty as a member of the Board of Inspection and Survey, Washington, D. C., November 8th.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending November 4, 1897.*

MURRAY, R. D., Surgeon. To resume command of service at Mobile, Ala. November 2, 1897.

KALLOCH, P. C., Surgeon. To rejoin station at Cairo, Ill. November 4, 1897.

CARRINGTON, P. M., Passed Assistant Surgeon. To relieve Passed Assistant Surgeon B. W. BROWN as acting chief clerk of Bureau. November 4, 1897.

COBB, J. O., Passed Assistant Surgeon. Upon completion of duties at Camp Fontainebleau, Miss., to rejoin station at New York. November 3, 1897.

BROWN, B. W., Passed Assistant Surgeon. Relieved from duty as acting chief clerk of Bureau and directed to report to the director of the Hygienic Laboratory for duty. November 4, 1897.

CLARKE, TALIAFERO, Assistant Surgeon. Upon being relieved by Surgeon P. C. KALLOCH, to rejoin station at Chicago, Ill. November 4, 1897.

Society Meetings for the Coming Week:

MONDAY, *November 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *November 16th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (semiannual), Kings, and Livingston (quarterly), N. Y.; Baltimore Academy of Medicine.

WEDNESDAY, *November 17th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *November 18th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private).

FRIDAY, *November 19th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Born.

FERGUSON.—In New York, on Thursday, October 28th, to Dr. and Mrs. F. Ferguson, a son.

Married.

DILLINGHAM—FERGUSON.—In New York, on Wednesday, November 3d, Dr. Frederick H. Dillingham and Miss Susie Ferguson.

EWERS—BEACH.—In Watertown, N. Y., on Wednesday, November 3d, Dr. William V. Ewers, of Rochester, and Miss Amy Beach.

Fuhrmann—Schmidt.—In New London, Wisconsin, on Thursday, October 21st, Dr. E. N. Fuhrmann, of Milwaukee, and Miss Marie Schmidt.

Kelly—Janssen.—In New Orleans, on Thursday, October 21st, Dr. E. S. Kelly and Miss Helena Janssen.

Morrison—Stout.—In New York, on Monday, November 8th, Dr. William Howe Morrison and Miss Fannie Augusta Stout.

Morton—Brown.—In Madison, Wisconsin, on Tuesday, November 2d, Mr. George Edwin Morton and Miss Mary Catherine Brown, daughter of Dr. Lindsey S. Brown.

Richardson—Akin.—In Troy, N. Y., on Tuesday, October 19th, Dr. Charles Harper Richardson and Miss Isabella Leslie Akin, daughter of Dr. Washington Akin.

Died.

Avery.—In New York, on Tuesday, November 2d, Dr. Charles H. Avery, aged sixty-three years.

Duane.—In New York, on Monday, November 8th, at the residence of his son, Dr. Alexander Duane, General James C. Duane, retired, U. S. Army, in the seventy-fourth year of his age.

Ross.—In Detroit, on Friday, October 29th, Dr. Alexander Milton Ross, of Montreal.

Vaughan.—In Columbus, Mississippi, on Friday, November 5th, Dr. Bolivar A. Vaughan, in the seventy-second year of his age.

Letters to the Editor.

THE WIDAL TYPHOID-FEVER REACTION.

Laboratory of the Board of Health of the Province of Quebec,
76 St. Gabriel Street, Montreal, *October 30, 1897.*

To the Editor of the New York Medical Journal:

Sir: Will you kindly allow me space for a correction in reference to a recent laboratory circular (No. 4) of the board of health of the Province of Quebec, in which a reaction of five to six per cent. acid to phenolphthalein is recommended for the bouillon test cultures in typhoid diagnosis? This should read three to four per cent. The most satisfactory point appears to be three and a half per cent., but the readings with this indicator vary somewhat according to the composition and temperature of the solution. The object of fixing the titration point was to avoid pseudo-reactions, and, as we have just finished the examination of two hundred additional non-typhoid bloods without encountering these, our plan may be assumed to be fairly successful, especially as the blood solution was left in contact with the culture for twenty-four hours in every case. The reaction of the culture is approximately that which has been employed by me since the beginning of my work on this subject last year, except during one or two brief intervals. Attention was called to the effect of the alterations as regards alkalinity upon the reaction by both Dr. Bates Block and myself (independently) in the discussion upon serum diagnosis before the American Medical Association in June, 1897.

Wyatt Johnston, M. D.

A CURIOUS BAR TO THE COLLECTION OF A PHYSICIAN'S BILL.

144 West Forty-eighth Street, New York, *October 23, 1897.*

To the Editor of the New York Medical Journal:

Sir: The legal limitations to our power of collection of fees for services rendered is of direct interest to all of us. Apropos of a recent decision of the supreme court of this State touching the liability of a widow for services rendered to her husband, the following personal case may be cited:

A bill for medical services to a minor, amounting to one hundred and ninety-one dollars, was rendered to the adult sister in whose house she was living, and who engaged the attendant. Payment was postponed upon various trivial pretexts. When the case finally came to court, there was no dispute as to the value of the services or the propriety of the charge, and, in addition thereto, there was full and thankful admission of the engagement to treat and of satisfaction with the result. The minor's father and mother were both alive, but were non-residents of the State and had never been seen by the attendant. The adult sister was mistress of a large household, came well recommended, and was apparently responsible in every way.

The defense was that at the time at which the services were rendered, the adult sister, the lessee of the house and the head of the household, lacked six months of being twenty-one years of age and was not responsible. Judgment was for the defendant, though the judge expressed his regret that the law rendered impossible the collection of an admittedly just claim.

This decision, though that of a minor court, is of some importance, for the judge held that it was the duty of the physician to ascertain very definitely in each case where a minor was treated the adult guardian who engaged and was responsible for the services. This included the ascertaining that such guardian was a resident of the State and was of age. A mere presumption to that effect based upon apparent action as head of a household was not enough.

Of course there can be but one opinion of the defense of infancy in such a case. It is a repudiation of an acknowledged obligation under a legal pretext. Yet there seems to be no remedy for it, save a greater stringency in the acceptance of strangers as account patients and a distinct understanding, either in writing or verbally in the presence of witnesses, as to who, being of adult age and the legal guardian of the minor, is to pay the bill.

William S. Gottheil, M. D.

Book Notices.

Lectures on the Malarial Fevers. By William Sydney Thayer, M. D., Associate Professor of Medicine in the Johns Hopkins University. New York: D. Appleton and Company, 1897. Pp. vii–326. [Price, $3.]

The author begins this work with a brief history of the development of our knowledge concerning the pathogenic agent of the malarial fevers, and then passes on to a description of the hæmatocytozoa of malaria, of which he distinguishes three types: the parasite of tertian fever, the parasite of quartan fever, and the parasite of æstivo-autumnal fever. While only a single variety may be present in the blood, he says, very commonly there is evidence of an infection with two groups of parasites, and these develop so that each group reaches maturity on alternate days, with the consequent production of quotidian fever. Very rarely has there been evidence of infection with multiple forms of the parasite.

The author agrees with other observers that the quartan parasite is smaller and more refractive, has less active amœboid movements, and has less active and coarser pigment granules than the tertian organism. Unfortunately, we are still ignorant of the form in which the malarial parasite exists outside of the human organism, as well as of the manner in which it enters the system; so the author assumes that the incubation period depends upon the type of the potential parasite absorbed at the moment of infection, upon its capacity for rapid multiplication, upon the quantity of infectious material absorbed, upon the local climatic, seasonal, and hygienic surroundings, and upon the physical condition of the infected individual.

In the clinical description of malarial fever the author states that the term typho-malarial fever "is wholly incorrect and unscientific." The name is likely to persist, however, as the designation for the low, asthenic fever due to paludism frequently seen in the Mississippi Valley. The author recurs to this subject on page 204, and says that, while it is true that cases of typhoid fever have been treated with quinine, it is also true that there are forms of paludal fever in which quinine is valueless.

It seems to us that the author has spoken too positively when he says that "we now know that no such condition exists" as a combination of typhoid and malarial poisoning (page 204). The impression is given that the hæmatocytozoa and the typhoid bacillus do not exist contemporaneously in the human body; and yet we believe it was as long ago as in 1889 that Dr. J. J. Kinyoun published his observations to the effect that he had found the hæmatocytozoa in the blood and Eberth's bacilli in the blood and evacuations of a patient affected with a continued fever of a typhoid type.

The author concludes from the analogy afforded by other similar conditions that the febrile paroxysms are due to the presence of toxic substances in the circulation. These substances arise from the destruction and disintegration of a large number of red corpuscles, and are probably liberated by the parasites themselves at the time of sporulation. Reference is made to the facts that in poisoning with potassium chlorate or carbon monoxide great numbers of red blood-corpuscles are destroyed and fever is practically absent, while there is increased toxicity of the urine after the paroxysm and of the sweat during its continuance.

The author believes that, while phagocytosis is a regular accompaniment of malarial infection, and occurs at definite periods in the cycle of existence of the specific organisms, there is as yet insufficient evidence that it plays a curative rôle. He also believes that the presence of an appreciable leucocytosis is strong evidence against the existence of uncomplicated malarial fever.

The volume shows careful study of the two thousand cases of malarial fever that have been under the author's observation during the past six years, and it is a matter of regret that so thorough and careful an investigator has not been able to pursue his studies in a more favorable locality. The types of paludism seen in Baltimore are essentially different from the forms seen on the lower Mississippi River and along the Arkansas and the Red Rivers. This the author evidently appreciates, to judge by the tenor of his remark in the note on the use of quinine in malarial hæmoglobinuria (page 307); it is a fact that the skilled practitioner of southwestern Arkansas and southeastern Indian Territory knows that he would pass sentence of death on his patient affected with that disease if he should administer quinine. Why quinine should so increase hæmatocytolysis and self-intoxication in this phase of paludism in the Mississippi Valley and not do so in Italy or other European countries, or even elsewhere in the United States, is a matter the reviewer can not explain; but he has had clinical proof that it does so.

We note hæmoglobanæmia, for hæmoglobinæmia, on page 221, and on page 73, the reference to Fig. 37, Plate II, should be Fig. 41, Plate III.

Dr. Thayer's work enhances the debt of the medical profession to one of the foremost medical institutions of the United States—Johns Hopkins Hospital—and must add to its reputation.

Diseases of the Gall Bladder and Bile Ducts. By A. W. Mayo Robson, F. R. C. S., Member of Council and Hunterian Professor of Surgery and Pathology, Royal College of Surgeons, London, etc. New York: William Wood and Company. Pp. viii–9 to 150.

This volume contains the lectures delivered by the author, during the early part of this year, as Hunterian professor of the Royal College of Surgeons.

The author's proposition that as soon as gallstones give serious trouble their removal by operation is the most rational method of treatment is supported by his experience, as he states he has not lost a patient after any such operation if there was absence of malignant disease, deep jaundice, or infective cholangeitis. He premised his lectures with anatomical references to the liver and its appendages, and then discussed the inflammatory affections of the gall bladder and bile ducts, intestinal obstruction due to gallstones, tumors of the gall bladder and bile ducts, and the surgical treatment of gallstones.

The lectures impress the reader as an exposition of the experience of a careful, conservative operator, one who is thoroughly conversant with what has been done in the field of hepatic surgery, but who does not hesitate to be a pioneer if the circumstances of the case demand boldness.

It is rather odd to read in a book that bears an American imprint the erroneous title "Belle Vue Hospital" (page 39). The book would be bettered if it had an index.

BOOKS, ETC., RECEIVED.

Ringworm and Alopecia Areata. Their Pathology, Diagnosis, and Treatment. By H. Aldersmith, M. B. Lond., F. R. C. S., Medical Officer, Christ's Hospital, London. Fourth Edition. Enlarged and Rewritten, with New Illustrations. London: H. K. Lewis, 1897. Pp. xvi–327.

A Text-book of Special Pathological Anatomy. By Ernst Ziegler, Professor of Pathology in the University of Freiburg. Translated and edited from the Eighth German Edition by Donald MacAlister, M. A., M. D., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and Henry W. Cattell, M. A., M. D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections IX–XV. New York and London: The Macmillan Company, 1897. Pp. xv–579 to 1221.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M. D., F. R. S. Revised and Edited by Thomas Stevenson, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. Twelfth American, edited with Citations and Additions from the Twelfth English Edition, by Clark Bell, Esq., LL. D., President of the American International Medico-legal Congress of 1889, etc. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. xvi–17 to 832.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L.S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume IV. New York and London: The Macmillan Company, 1897. Pp. xii–1001.

A Manual of Obstetric Practice. For Students and Practitioners. By Professor A. Dührssen, M. D., Late First Assistant in the Obstetric Clinic of the Charité Hospital in Berlin. Translated and edited from the Sixth Amended and Enlarged Edition by John W. Taylor, M. D., F. R. C. S., Surgeon to the Women's Hospital, Birmingham, and Frederick Edge, M. D., F. R. C. S., Surgeon to the Women's Hospital, Wolverhampton. With Illustrations. London: H. K. Lewis, 1897. Pp. xviii–304.

Karezza: Ethics of Marriage. By Alice B. Stockham, M. D. Chicago: Alice B. Stockham & Co., 1897. Pp. viii–9 to 136.

Transactions of the Michigan State Medical Society for the Year 1897. Volume XXI.

Morphinism. By J. B. Mattison, M. D. [Reprinted from the *Atlantic Medical Weekly.*]

The Diagnosis of the Morphine Disease. By J. B. Mattison. [Reprinted from the *Medical Record.*]

The Post-active Treatment of Narcotic Habitués By J. B. Mattison, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Nourishment of the Sick. By Dr. W. H. Gilbert, of Baden-Baden, Germany. Translated from the German.

Operative Indications in Appendicitis. By Charles S. Briggs, M. D., of Nashville, Tenn. [Reprinted from the *Nashville Journal of Medicine and Surgery.*]

On Some Points in the Surgical Physiology of the Foot. By T. S. Ellis, of Gloucester, England. [Reprinted from the *Medico-chirurgical Transactions.*]

Stricture of the Urethra in Male Children. By L. Bolton Bangs, M. D. [Reprinted from the *Medical Record.*]

A Case of Pyæmia in a Young Infant. By John C. Da Costa, M. D. [Reprinted from the *American Journal of Obstetrics.*]

The Treatment of Malaria. By Judson Daland, M. D. [Reprinted from *International Clinics.*]

Thermics and Thermo-dynamics of the Body. By F. J. B. Cordeiro, M. D., U. S. Navy. [Reprinted from the *Sanitarian.*]

Miscellany.

Leprosy and Hawaiian Annexation.—The Hawaiian Islands have long enjoyed the unenviable distinction of being the seat of the most active leprous centre of modern times, and the proposed annexation of these islands by the United States has given a special interest to the question of leprosy. In an article in the November number of the *North American Review* Dr. Prince A. Morrow, of New York, discusses the sanitary aspects of the scheme. As he remarks, "in view of the fact that ten per cent. of the Hawaiian race are affected with leprosy, it becomes a serious question as to what will be the effect of the absorption of this tainted population upon the health interests of this country."

The article gives many facts of interest from a demographic point of view. Reference is made to the extraordinary depletion of the native population, which in a little more than a century has diminished from four hundred thousand to less than thirty-five thousand. Prominent among the causes which have led to this rapid decay and death of the native race Dr. Morrow places the introduction of diseases peculiar to civilization, which, transplanted to this virgin soil, have exhibited a malignancy and virulence unknown in older communities.

Thus, the mortality of our whooping-cough and measles, introduced in 1849, was extraordinary, almost every case terminating fatally. The ravages of small-pox were simply frightful; in the epidemic of 1853 more than half the native population of Honolulu died from the disease. It is a noteworthy fact that at the present time, since the natives have acquired the partial protection of hereditary immunity, these same diseases no longer exhibit a virulent type.

After a brief account of the introduction of leprosy, its remarkably rapid dissemination, and the measures employed by the government for its suppression, a careful study is made of the results of the system of segregation adopted by the board of health. "What," he asks, "has been the result of thirty years' crusade against this gigantic evil which is slowly sapping the life-blood of the Hawaiian people? Is leprosy on the increase or in process of extermination? Taking the records of the leper settlement as a basis of comparison, there would seem to be no hopeful signs of its extinction. In the first twenty years of its establishment to January 1, 1886, 3,076 lepers were sent to the settlement; in the next ten years 2,049 were admitted. This large increase of admissions may not be due to an actual increase in the number of lepers in the islands, but to more active and vigorous methods of segregation. Again, in the first-mentioned period the number of lepers in the settlement ranged from 200 to 800, the average being about 500; in recent years the number has varied from 1,000 to 1,200. Notwithstanding the optimistic view of the health authorities that leprosy is on the decrease, the fact remains that the annual consignment of lepers to the settlement shows little diminution in number. This yearly increment of fresh admissions which goes to recruit the rapidly dying population of Molokai is made up of previously undiscovered cases. All the indications point to the existence of a vast deal of latent leprosy, which, as the disease develops into a recognizable form, must continue for many years to come to furnish a constantly recurring series of subjects for the leper colony."

In addition to the 1,200 lepers at Molokai Dr. Morrow computes that there are two or three times as many at large in whom the disease is latent or in the incubative stage, yet sure to develop. "Each of these lepers is a source of danger to all with whom he may come into intimate or prolonged contact. That the disease is contagious there is the most abundant and conclusive proof. Upon no other possible ground can be explained its remarkably rapid dissemination in the islands. The most incontrovertible evidence of its communicability is found in the fact that many foreigners coming from countries where leprosy is unknown and whose antecedents are free from any possible leprous taint have contracted the disease. That the disease is spreading among the foreign population is shown by the fact that in the first twenty years of the leper settlement only about one per cent. of the lepers were foreigners; in recent years this proportion has increased to five per cent. The statistics of the leper settlement by no means convey a fair indication of the actual number of foreigners who have become lepers, as foreigners showing signs of the disease are given the privilege of leaving the country, so that, as a rule, only the poorer and more destitute are committed."

In considering the practical question of the danger to the health interests of this country involved in Hawaiian annexation, the writer thinks that no great danger is to be apprehended from the immigration of Hawaiian lepers; although many, in their desire to escape Molokai, might come. "In the event of annexation it would be idle to think of confining leprosy to the islands, or rather of excluding it from this country, by quarantine measures. In its earlier stage leprosy defies detection and no system of quarantine has ever been devised which would exclude the importation of a disease so little manifest on ordinary inspection as leprosy; only the advanced cases could be arrested." In the writer's opinion the principal danger would come from the establishment of more intimate commercial relations and the opening up of new enterprises inviting capital and labor and, consequent thereon, the large influx of Americans into the islands and their exposure to contact with the tainted population.

This increased tide of travel and communication would undoubtedly create conditions favorable to the general dissemination of the seeds of leprosy in this country—the only question is whether the soil found here is favorable to their germination and growth. He thinks that certain climatic and other conditions exert a marked inhibitory influence upon the development of the disease. In the dry, cool climate of our northern and northwestern States leprosy does not appear to take root and flourish, but rather to die out from natural causes, while in the warm, moist, more tropical climate of Louisiana and other southern States the conditions are favorable to its development. He concludes as follows: "Experience shows that in all countries where leprosy has become epidemic its advance is insidious; it spreads slowly, and before the health authorities awaken to a realization of the danger it has made such headway that its further progress can not be arrested. All of these facts should be fully considered and their importance from a sanitary point of view carefully weighed by our legislative authorities before deciding upon the annexation of Hawaii with its leprous population."

Michigan Sanitary Work Used Abroad.—Dr. Henry B. Baker, secretary of the State board of health of Michigan, sends us a statement to the effect that the *Actualité médicale*, a medical journal published in Paris, contains in its number for August 15th a long article on Ozone and Ozonometry; a Comparison of their Status in Various Countries. This paper was read at the Congress of Hygiene and Medical Demography at Brussels in August last. In this paper the author, M. Foveau de Courmelles, makes much use of the extensive statistics of observations of ozone in Michigan, compiled in the office of the State board of health and published in its annual reports. He says: "Let us also remember that A. Fortin, Baker, and, previous to them, Schonbein in Berlin, in 1847, Spengler in Mecklenburg, in 1848, Clement in Frankfort, in 1849, Schorndorff, in 1848, and various physicians in Königsberg, in 1852, confirmed the existence of abundance of ozone in the ambiant air during epidemics of grippe." He calls attention to the fact that the statements made by Dr. Baker are especially to be relied upon, because "he has made fourteen years' research and has prepared statistical tables covering these fourteen years."

M. Foveau de Courmelles quotes at length the conclusions proved by the Michigan tables, and adds: "The importance of the study of the environments and the surroundings, so modificatory of the beings that live therein—men and microbes—is undeniable. And if certain seasons favor the outbreak of certain diseases, it is that, aside from the heat or cold, which favors the morbid germs, there are other elements acting in the same direction and putting the organism in a state of inferiority. Atmospheric electricity—if one may judge from the benefits derived from therapeutic electricity—is an element which can not be neglected; the same is true of ozone. We have found in the ambiant air a basic substance which is not ammonia, the nature of which is still to be determined. Dr. Baker says: 'This basic substance is soda, as shown by the spectroscope. According to my numerous observations with the spectroscope, sodium is always present in our Michigan atmosphere.'"

Protection in France against Foreign Medical Practitioners.—The *Boston Medical and Surgical Journal* for October 28th publishes the following letter from a correspondent:

"You may possibly have heard that the French have been legislating recently in such a way against foreign doctors that, as their law now stands, it is *impossible* for a foreign doctor to come and practise in France. To do so he must first take the French B. A. degree, and then go through the five-year curriculum. This means that he must spend about seven years in France before being allowed to practise, and this no matter who he may be, how well known, or what positions he may have occupied.

"You will see at a glance that this is practically a prohibitive law. Suppose, for instance, that your health broke down and you wished to come and practise in the south of France for the sake of the climate. It could not be done.

"I consider this law, although as you will see *it favors me*, preventing other men from coming here, as so contemptible that I think the men at home ought to take some notice of it, by legislating against the foreigners who shut us out—French, Germans, Swiss, and (soon) the Italians—and also by not sending their patients to French practitioners here or in the South.

"I think the action of the French authorities is one that is grossly unfair, and that in the long run, when the present men who are here die off, it is going to cause a great deal of annoyance and trouble to the traveling Americans. The Frenchmen never speak English, and you know that all their habits of hygiene and their care of the sick, as well as methods of treatment, differ widely from ours. The day will come, with the present law, when Americans will have no one to fall back on but these Frenchmen, who, whatever their merit may be, which I do not contest for a moment, will *never* get on well with Americans, and particularly with Americans ignorant of the French language. Fancy yourself, for instance, falling ill in Russia with no one but a Russian physician who didn't know English!"

Shall Fermented and Distilled Liquors be dismissed from the United States Pharmacopœia?—In the November number of the *American Journal of Pharmacy* Mr. Joseph W. England says that the recommendation of the president of the American Pharmaceutical Association, Mr. J. E. Morrison, in his annual address delivered before the recent meeting of that body, to the effect that fermented and distilled "liquors" be not recognized by the U. S. Pharmacopœia as medicinal agents—which recommendation, by the by, was voted down by the association—and the paper by Dr. N. S. Davis, on The Therapeutic Properties of Alcohol and the Reasons why the Fermented and Distilled Liquors used as Beverages should not be Recognized in the Pharmacopœia as Medicinal Agents, read before the Section in Materia Medica, Pharmacy, and Therapeutics of the American Medical Association, at the meeting of 1897, have both excited interest in the medical and pharmaceutical professions.

President Morrison, he says, takes the ground that the sale of "liquors" by druggists has done an incalculable amount of injury to American pharmacy; that the government has placed pharmacists who sell "liquors" on the same footing as saloon-keepers; that this condition of affairs should be terminated by the complete abolition of every form of dealing in fermented or spirituous liquors, and that a great advance in this direction would be taken if it was decided to discard all such preparations from the U. S. Pharmacopœia.

The question as to whether fermented and distilled liquors shall be dismissed from the U. S. Pharmacopœia or not is, to his mind, wholly a medical question. If these liquors have sufficient *therapeutic* worth to warrant their use in medical practice, they should be retained. If they have not, they should be dismissed. It is not a matter of sentiment, either for or against the liquor traffic. It is a matter of simple justice to the sick. So long as "liquors" are prescribed by a majority of physicians and used by the sick, so long should our national guide-book recognize them, and demand a certain standard of quality, the same as it does for any other *drug*. The mere fact that "liquors" are recognized by the Pharmacopœia does not compel a druggist to keep or sell them if he does not wish to; but it does compel him, if he sells them on the orders of physicians, to sell them of a certain quality, or violate official standards. On the other hand, if "liquors" were not officially recognized, there would be no medicinal standards, and the sick would suffer. A "liquor" is sold, or should be sold, by pharmacists only as a drug. If sold for any other reason, then the liquor-dealers masquerading as druggists should be legislated out of the business. The sick should not be punished for needing liquors, or denied the privilege of obtaining them of standard quality.

Dr. Davis, in his paper, maintains that *physiological* experiments have shown that alcohol in human tissues retards natural metabolic changes, lessens the processes of oxidation and elimination, diminishes nerve-sensibility, and when taken from day to day, induces cell and tissue degeneration. What the changes would be in human tissues undergoing *abnormal* metabolic changes, he does not refer to, and yet the clinical value of a drug is an all-important factor. Physiological experiments are necessary, and are good enough, as far as they go; but unless confirmed by clinical results, they are not conclusive.

Further, Dr. Davis alleges that while the present United States Pharmacopœia recognizes wine, whisky, and brandy, *it "does not give a definite official standard of alcoholic strength for either of them."* This is an error. While no *fixed* standard is given, yet it is demanded that white and red wine shall contain ten to fourteen per cent., whisky forty-five to fifty per cent., and brandy thirty-nine to forty-seven per cent. of alcohol. The most radical statement, however, in Dr. Davis's paper, and the one, doubtless, that will be most disputed by clinicians, is the assertion that alcohol is the *only* important therapeutic agent in all "liquors," and if other therapeutic agents exist in addition to alcohol, their proportionate quantity and quality is far more variable than their percentage of alcohol is.

"Almost the only constituents," he writes, "found in whisky and brandy, besides the alcohol and water, are very variable quantities of *fusel oil,* tannin, and, in very old specimens, a trace of some ethereal substance to which connoisseurs attribute the special bouquet. So far from adding to the therapeutic value, the first two substances are regarded as very undesirable impurities, and the last-named has never been isolated in sufficient quantity to have its medical qualities tried."

Let us first note the inaccuracies of these statements, says Mr. England. While fusel oil, or amylic alcohol, is found in recently distilled whiskies, it is not found in those that have been properly aged, or, if present, it is present, as stated by the Pharmacopœia, in traces only. The Pharmacopœia requires the absence of *all* fusel oil from the official brandy. As to the oak tannin in whisky and brandy, from the casks, it is only present in traces, and it is difficult to see how it can be regarded as a very undesirable impurity.

If "liquors" have therapeutic worth over simple mixtures of alcohol and water in fixed strengths—and the burden of clinical evidence is that they have—this value must be due to the extractive matters contained in them; and it is upon this line, with regard to a certain constituent of whisky, that a few words may be said.

During the past five years the writer has examined many samples of whisky chemically, and next to the alcoholic strength and the absence of fusel oil, one of the most important factors in such examinations has been the determination of the total acidity. The importance of this factor has been generally overlooked, and was pointed out to him, he says, by the late Professor John M. Maisch, who said that he had examined many barrels of whisky during the civil war, for the government, and always found that the best whiskies had the highest acidity. Kappel, he said, had shown the presence of valerianic acid and the absence of acetic acid in potato and rye whiskies, and expressed the opinion that, while valerianic acid was probably the main acid of whiskies, this had not been positively determined. Since then, Mr. England has been especially observant of the acid factor in whisky examinations, and has found that, generally, the oldest, fusel-oil-free, highest-priced, and most strongly alcoholic whisky has the highest acidity. Occasionally there is an exception. A raw whisky may be so refined before aging that it will not have the usual amount of the acid-forming compounds, and hence show a low acidity.

The Pharmacopœia of 1890, says Mr. England, demands a whisky "at least two years old," and requires that to render 100 c. c. of whisky distinctly alkaline to litmus there should be employed not more than 1.2 c. c. of normal-potassium-hydrate solution.

If valerianic acid is the main acid in whisky, says Mr. England, the reaction in neutralization with sodium hydrate would be as follows:

$$\underset{101.77}{HC_5H_9O_2} + \underset{39.96}{NaHO} = \underset{123.77}{NaC_5H_9O_2} + \underset{17.96}{H_2O}$$

Assuming, he continues, that in good whisky an average of 15 c. c. of deci-normal sodium hydrate solution (or 1.5 c. c. of normal) was required to neutralize 100 c. c. of whisky, this would be equal to 0.06 gramme of NaHO. And if 39.96 grammes of NaHO neutralize 101.77 grammes of valerianic acid, 0.06 gramme should neutralize 0.15 gramme of acid, as follows: 39.96 : 0.06 :: 101.77 : 0.15. In other words, each *fluidounce* of whisky would contain nearly three fourths of a *grain* of free valerianic acid.

The U. S. Pharmacopœia (1890) standard of 1.2 c. c. is, in the writer's judgment, too low for a good whisky. It should be at least 1.4 or 1.5, and a three- or four-year-old whisky should be required instead of a "not less than two-year-old" product. The U. S. Pharmacopœia of 1880 required that 100 c. c. of whisky should be rendered distinctly alkaline to litmus by 2 c. c. of the volumetric solution of soda. What the exact chemical changes are that take place in whisky on aging, whether or not any acetic acid is formed from the ethyl alcohol by oxidation from the air during the process of fermentation, whether acetic ether is produced with acetic acid as an ultimate product, and whether the fusel oil, or amylic alcohol, present in raw whisky is directly oxidized by age into valerianic acid, or is first converted into valerianic ether and then into acid, are all questions which have not yet been solved by chemical science, and remain for future work.

The extractive of whisky most probably has therapeutic worth, as have also the extractives in wines and brandies, and before any action is taken by the committee on revision of the U. S. Pharmacopœia looking toward the dismissal of these products, there should be a thorough and extended examination made of them chemically and therapeutically.

Poultices in Pulmonary Diseases of Children.—In an article on this subject in the November number of *Medicine* Dr. J. M. G. Carter remarks that the method of employment of this agent is just as important as in the case of any other. It is unwise, he says, to expect decided effects from a poultice when used in an irregular way or at great intervals. Directions must be definite, and results will be positive.

In bronchopneumonia, pneumonia, or bronchitis, he says, it is not always advisable, but is often beneficial. If the patient is poor, the apartment cold, and provisions for nursing meagre, it may be better not to undertake the use of this agent. The method and circumstances are everything. Under favorable conditions—that is, under conditions where the physician's directions can be faithfully carried out—the poultice is of great value. When directions can not be fully conformed to this agent should not be used—a rule which applies to all remedies.

In bronchopneumonia, when dyspnœa is marked; in pneumonia, when pain is great; in pleurisy and bronchitis, accompanied by much distress—a hot poultice surrounding the body will often give very quick and permanent relief; but it must be kept hot by frequent changing or covering with oiled silk and heating with hot-water bottles.

The failure to get good results from the use of poultices, continues the author, indicates a failure to observe therapeutic indications, or negligence in the method of using the remedy. The fault, then, is not with the poultice as a remedial agent, but with the method of use, or with the using it when there is some contraindication. It is no more a remedy for all pulmonary ailments than Dover's powder is. A critical study of cases will help, he thinks, to determine the conditions in which this remedy is of greatest value, and will aid in restoring the poultice to its former deservedly high place in the minds of the profession, and conduce to a proper limitation of its field of usefulness. Exact therapeusis requires that a remedy should be prescribed at the proper time, in a definite manner, for a known purpose. Other important local applications which require as careful and scientific use are the mustard, capsicum, and spice poultice or plaster; stupes of turpentine, camphor, and alcohol; and jackets of spongio-piline, cotton, or lamb's wool. None of these can be applied in every case indiscriminately.

The Colorado Medicinal Flora at the Next Meeting of the American Medical Association.—At the recent meeting of the Colorado State Medical Society, says a writer in the November number of the *Western Medical and Surgical Gazette*, a resolution was passed providing for an exhibit of the medical flora of the State at the next meeting of the American Medical Association, to be held in Denver in May, 1897 [1898?].

It is desired, he says, to gain as much information as possible of each and every plant growing within the confines of the State employed therapeutically by the profession, or as a household remedy, or possessing poisonous attributes. It is also intended to make as complete a display of these as is feasible. The committee desires, at first, information along the following lines, being those proposed by the Commission of the Pan-American Medical Congress for the Study of American Medical Flora:

1. Local names.
2. Local uses, together with historical facts.
3. Geographical distribution and degree of abundance in the wild state.
4. Is the plant collected for market, and if so,
    (*a*) At what season of the year?
    (*b*) To how great an extent?
    (*c*) How prepared for market?
    (*d*) What is the effect of such collection upon the wild supply?
    (*e*) What price does it bring?
    (*f*) Is the industry profitable?
5. Is the plant, or has it ever been, cultivated? If so, give all information, particularly as to whether such supplies are of superior quality, and whether the industry has proved profitable.
6. If not cultivated, present facts concerning the life history of the plant which might aid in determining methods of cultivation.
7. Is the drug subjected to substitution or adulteration? If so, give information as to the plants used for this purpose.

The committee trusts, continues the writer, that the profession will not refrain from sending such information as may be in their power, on the supposition that others will be able to and will send fuller reports. It is not expected that many will be able to contribute exhaustive information on all these points concerning any plant, but it is desired that all will be willing to communicate such partial knowledge as they may possess, and the committee will compile the knowledge thus gained.

It is requested that communications be sent at the earliest possible date to the chairman of the committee, Dr. C. D. Spivak, California Block, Denver, Colorado.

The Heredity of Acquired Characteristics.—The theory of Weismann, says a writer in the *Boston Medical and Surgical Journal* for October 21st, that acquired characteristics are not transmitted by heredity has not found favor with the medical profession. That certain nervous affections acquired by the parent under circumstances of shock, great mental strain, etc., may be transmitted to one or more children is a matter of frequent observation.

Lombroso, says the writer, considers the question of the utmost importance in explaining the origin of zoological modifications in different species. He alludes to the vast number of facts on record to prove that physical characteristics artificially acquired have been hereditarily transmitted. The biological history of the camel makes it well-nigh certain that the hump, which, as in the analogous tumors on porters' backs, is only a collection of fat around a slight protuberance of the vertebræ, is a physical modification produced by burden-bearing, the wild llamas, ancestors of the camel, having absolutely no hump, while this hump is atrophied in the racing camel. The callosities of the knees and breasts, which arise in the camel from continual kneeling to receive its load, are acquired like the callosities of the human body, and, though wanting in the camel's wild brethren, they are perfectly apparent in the young camel before he has begun to work.

Among the many examples of acquired psychical characteristics, continues the writer, is the following brought forward by Lombroso: "Civilized man has acquired in the cerebral cortex—in a fold of the parietal lobe—the psychical centre of reading, which in certain maladies (in thrombosis and apoplexy) is paralyzed, causing the reading power to disappear. Now this centre has positively been acquired within historic time; it is certainly not found in men yet savage. The same may be said of the speech centre—the third left frontal convolution—since everything goes to prove that the first man had no language, just as the new-born child has no language, and the Hottentots and Weddahs have but very imperfect ones. The organ tends to become more and more differentiated in our modern civilization."

Weismann, says the writer, contends that influences which affect the somatic cells do not correspondingly affect the reproductive cells so that the modification or defect is entailed to progeny. But, he asks, does not the fact of hereditary syphilis prove such transmission? Here, apparently, is an external agent, the virus of syphilis, which has profoundly modified both germ cells and somatic cells in the parent and in the offspring. May not a thousand influences, of various orders, produce a similar effect? The syphilitic father can not hope that, in accordance with the Weismann doctrine, his unborn progeny may escape the malefic infection. The true doctrine of heredity lends no support to this view. That there is a direct transmission of moral as well as physical traits has been of common observation from antiquity.

The New York State Association of Railway Surgeons.—The seventh annual meeting will be held in New York on Tuesday, November 16th, under the presidency of Dr. J. Frank Valentine, of Brooklyn. In addition to the president's address, the programme includes the following papers: Neuropsychic Manifestations Subsequent to Fractures or Dislocations, by Dr. Thomas H. Manley, of New York; A Review of So-called Traumatic Neuroses, by Dr. W. B. Outten, of St. Louis; Alleged Injuries, by Dr. W. J. Herdman, of Ann Arbor, Michigan; Medico-legal Features, by the Hon. L. L. Gilbert, of Pittsburgh; an address, by the Hon. W. H. Baldwin, Jr.; Medical Expert Testimony, by Clark Bell, Esq., of New York; Internal Injuries, by Dr. C. B. Herrick, of Troy; Primary Dressings, by Dr. C. S. Parkhill, of Hornellsville, N. Y.; Primary Hospital Treatment of those Injured *en Masse*, by Dr. John F. Burns, of Brooklyn; Asepsis in Emergencies, by Dr. W. C. Wood, of Gloversville, N. Y.; Some Newer Antiseptics; their Uses in Railway Surgery, by Dr. F. A. Palmer, of Mechanicsville, N. Y.; Intestinal Toxæmia as a Factor in Retarding the Healing of Wounds, by Dr. Harvey P. Jack, of Canisteo, N. Y.; and Injuries to the Nervous System in Railway Accidents, by Dr. Charles R. Phillips, of Hornellsville, N. Y.

Antrectomy as a Treatment for Chronic Purulent Otitis Media.—The *Clinical Journal* for October contains an article on this subject by Mr. W. Arbuthnot Lane in which he again calls attention to the operation which he suggested and performed in cases of chronic purulent middle-ear disease which did not yield to ordinary treatment. By antrectomy the author means the complete obliteration of the antrum or, if that is impossible, sufficiently complete to prevent the formation of a cavity or sinus in the same position.

Mr. Lane states that he has performed antrectomy a considerable number of times upon patients suffering from chronic purulent otitis media, and very often from pain, either more or less continuously, or at intervals, over the whole side of the head, or perhaps only over the mastoid process and above the ear; sometimes neuralgic in character, and at other times described as being boring, or throbbing, or like a deep-seated abscess, and very often preventing the patient from lying on that side of the head when in bed. In many of these cases, he says, the patient did not complain of pain or tenderness when the mastoid process was forcibly compressed with the thumb, or struck with a pleximeter. Such patients not uncommonly have a slight but distinct rise of temperature in the late afternoon or evening, showing that some absorption of septic products takes place constantly from the antrum, and produces a harmful influence on the health of the sufferer.

In all, or nearly all, these cases, he continues, the antrum was obviously very definitely enlarged—in most cases very considerably so—and, what is a matter of the greatest importance, the mastoid bone hardly ever contained any but the most minute cancellous spaces; but, on the other hand, it was often so dense as to take a good hour's hard work or more, with gouges and a heavy mallet, to expose the antral cavity.

Mr. Lane goes on to say that the duration of the operation in the case of very dense bone may be much curtailed and the operation itself facilitated by the use of an electric motor and burrs. If the middle ear is much diseased, it is then thoroughly cleared of its contents, any relic of the membrana tympani being carefully removed, and the aperture of communication with the antrum may be somewhat enlarged by the removal of portions of its outer boundary, the whole of the posterior boundary of the external auditory meatus having been left intact as far as possible when the mastoid process was cut away.

In performing this last stage of the operation, he says, the greatest care must be taken to avoid any damage to the facial nerve; this, he believes, is the chief, if not the only, risk of the operation; but it is one that would be most distressing to the patient, and should therefore always be in the mind of the surgeon should he consider it advisable to enlarge the aperture into the middle ear.

If there is no perforation in the membrana tympani, or if with a perforation of small size there is no evidence of extensive disease of the middle ear, the membrane may be left untouched with advantage.

Mr. Lane states that, regarding the subsequent condition of the patient months or years after the operation, when the simple daily routine of cleaning the ear and introducing a plug into the meatus is followed, the hearing capacity not only retains its improved condition, but often becomes more acute. If, however, the patient is dirty and careless, and pays no attention to the ear after he passes from observation, the hearing capacity gradually diminishes owing to the accumulation of dry secretions and inflammatory materials in the middle ear.

The author states that he considers the operation one of the most satisfactory and useful known in surgery; that in skilled hands it is accompanied by practically no risk; it is followed by no pain worth talking of; it absolutely frees the patient from subsequent risk from intracranial complications if the simple directions as to cleansing, etc., are followed; it removes the foul discharge; the headache, neuralgic pain, and tenderness disappear; it very often cures any existing facial paralysis; it prevents the formation of aural polypi; and it gives the patient back almost perfect hearing, which remains in the same condition or improves if he takes with it only such small trouble as the ordinary cleanly person habitually devotes to his teeth.

He calls attention to the fact that by ventilating the nasopharynx systematicaly and habitually, and in this manner diminishing largely the tendency to obstruction of the Eustachian tube, it is possible in many cases to relieve the patient sufficiently of the inflammation of the middle ear and antrum as to obviate the necessity of performing antrectomy.

Death of the Fœtus in Utero from a Gunshot Wound, with Recovery of the Mother.—The following case is recorded in the *Lancet* for October 23d by Dr. Samuel W. Robinson, of Dublin: While on a pleasure trip one morning in the Province of Corrientes, in the Argentine Republic, he was called to see a young woman who had been shot in the abdomen. She was eighteen years old and had been married eight months. The author found her lying on a bed, but with very little expression of shock or suffering. An examination revealed a bullet wound, made by a fair-sized ball, a little to the right of the umbilicus and slightly below. There was no bleeding more than an odd drop of venous blood for a radius of two inches round the wound; there was extravasation of liquid in the tissues, at the time thought to be blood, but now believed to have been amniotic fluid. The abdomen was very pendulous, as is generally the case with the peasantry of these parts.

The author gave her opium, and sent for instruments in case of necessity. About an hour afterward labor set in and went on slowly until two o'clock the next morning, when, the woman being fairly exhausted and the pains weak, the os being sufficiently dilated, she was delivered by long forceps. The post-partum hæmorrhage being very sharp, there was no time to examine the child, which had already begun to decompose. The hand was next passed into the uterus, and an opening in the anterior wall could be distinctly felt, with a part of the membranes prolapsed and held tight in the same. This no attempt was made to loosen, but the membranes were torn off close to the uterine walls, and the hand withdrawn with placenta which was loose in the cavity. The uterus was washed out with hot antiseptic solution (creolin), and ergot was given. On examining the child, which was at almost full time, it was found that the ball had entered the right shoulder by the junction of the acromion process with the scapula, and had come out in the left iliac region, drawing with it a coil of small intestine which was not wounded.

As there was but one wound perceptible in the uterus, says the author, the question arose: Where had the ball gone to? However, this was easily settled, as, on examining the clots, etc., it was found in the *débris*. The mother made an uninterrupted recovery, her treatment consisting in the application of iodoform to the external wound, which healed without suppuration, as all wounds do which have been made by a bullet having a great velocity (this one had been fired at a distance of three metres), ordinary antiseptic treatment being used. The uterus was washed out twice a day with a solution of creolin.

The Medical Knowledge of French Schoolmasters.—"According to the *Progrès médical*," says the *Lancet* for October 23d, "the following 'literary exercise' was recently given by a teacher in a Parisian *Lycée*: '1. A medical officer of La Charité Hospital having need of a human subject in order to carry out some medical experiments, makes known his requirement to one of the sick attendants, whereupon the latter promises to let him have No. 46, who, he adds, has only a couple of hours to live. Give the conversation between these two persons in ten lines. 2. Such a speedy arrangement does not suit the medical officer, who is obliged to absent himself for twenty-four hours. Give his soliloquy in five lines. 3. A cordial administered to the afore-mentioned number, while *in extremis*, has so happy an effect that after a long sleep the lately moribund patient awakes convalescent. Give the comic disappointment of the attendant, together with the remarks of No. 46, in a dialogue of twenty lines. 4. The next day the medical officer comes to fetch his subject, but the attendant informs him that the dying man has changed his mind. Give the respective remarks in ten lines.'"

The Ventilation of Underground Railways.—In an editorial on this subject in the *British Medical Journal* for October 23d, the writer states that the report of the committee on ventilation of the Metropolitan Railway tunnels, recently issued, deals with the composition and effects of the atmosphere of the tunnels, and the remedies proposed. It was found, continues the writer, that in parts of the tunnel between Baker Street and Gower Street the proportion of carbonic acid was commonly as high as sixty or seventy volumes to every ten thousand. Carbonic oxide and sulphurous acid could not merely be detected and estimated, but were found in quantities sufficient to produce most distinct effects.

It seems, however, according to the report, that the exposure of both passengers and employees on the railway is too short for distinct symptoms of carbonic-oxide poisoning to manifest themselves, save under exceptional circumstances, and that it is really the sulphurous acid which is responsible for most of the discomfort caused by the air. One part or more to every hundred thousand was often present in the air; and according to the researches of Lehmann this proportion would suffice to produce the bronchial irritation, coughing, sneezing, etc., which are so easily produced in many persons that they altogether avoid traveling on the Underground Railway.

The statistics submitted on behalf of the railway company, the writer goes on to say, seem to show clearly that the vitiated air has no ill effects on the health of the employees, who appear quickly to become so inured to the sulphurous acid that they cease to perceive its presence.

From a consideration of the effects of the air on passengers and the proportion of carbonic oxide present in it, the committee recommended that from fifteen to twenty parts of carbonic acid to every ten thousand should be regarded as the maximum measure of permitted impurity. This recommendation, taken along with the analyses, amounts to a distinct condemnation of the present system of ventilation (by "blowholes") along the Metropolitan and District Railways. With this system, however, although the air would be improved, the standard of purity recommended could not be attained.

Concerning ventilation by fans, says the writer, the committee reported that this system, properly designed, would give satisfactory ventilation, but that the cost would be considerable.

The chief conclusion, however, reached by the committee, was that pure air could be best obtained with certainty in the tunnels of railways having large traffic by means of electric working. The writer has no doubt that this would be by far the best solution of the difficulty. With the abolition of the steam locomotive, he says, the carbonic oxide and other objectionable impurities would once and for ever be got rid of; and with them would go most of the dirt, which is at present almost as great an annoyance to passengers as the bad air.

It is probable, he thinks, that electric traction will be introduced within a very short time.

The Pathology and Treatment of Hay Fever.—We are indebted to the *Medical and Surgical Reporter* for the proof-sheets of a paper on Hay Fever, by Dr. Edmund W. Holmes, of Philadelphia, presumaby read before the Philadelphia County Medical Society. Dr. Holmes thus summarizes the theories of hay fever:

1. It may be due to chronic nasal catarrh, with its dependent hyperæsthesia, congestion, and obstruction, the centric nervous symptoms being secondary to the hyperæsthetic condition of the nostrils. The extremists even deny its existence as a separate entity, regarding hay fever merely as a condition—a form of ordinary catarrh.

2. It may be due to functional activity or paresis of the governing (vasomotor) centres, with overexcitability of the erectile (cavernous) tissues, in response to peripheral irritation. The erethism of the cavernous tissue, though secondary to the centric condition, is the immediately essential part, the most serious symptoms coinciding with the swelling of this tissue and being dissipated with the subsidence of the same—a vasomotor disease.

3. It may be due to an organic alteration of the nerve fibres terminating in the nasal region, and chiefly in the three reflex areas.

4. It may be one of the multiform manifestations of the uric-acid diathesis.

In all these theories, says the author, there is more or less firm belief in the agency of pollen, either in inducing the disease or, at least, the paroxysms.

Dr. Holmes then gives the following summary of the local pathology: The symptoms of hay fever are due to obstruction of the nasal passages, the result of chronic nasal disease. Hereby is set up a special and extraordinary irritability of the terminal nerve fibres, perhaps with organic alteration thereof, and resultant excessive excitability of the nasal and other mucous membranes and of the cavernous tissues, together with hyperæsthesia of the nerve centres, the degree of irritability varying with different individuals and under the stimulus of certain special irritants. As a result of this organic alteration and tumefaction the reflex sensitive areas are directly involved or impinged upon, and the reflex phenomena, in varying proportions of cough, asthma, sneezing, lacrymation, and a congestion of tissues, contiguous and continuous, with resultant general prostration, ensue. The greater the local congestion and inflammation the more constant the reflected symptoms. Certain observers declare that in all cases of hay fever there is chronic nasal disease which is the original starting point; but others deny this, maintaining that there may be only hyperæsthesia, especially of the reflex areas, without further evident disease.

It is exceedingly unfortunate for the strict "localists," says Dr. Holmes, that all cases of hypertrophy of the nasal mucosa are not attended with hay fever, or all cases of hay fever associated with observable organic lesions: that the excessive oversensibility of the membrane in hay fever is not accounted for, or its periodicity explained; and that many of those treated strictly according to these methods are not cured. The author cites a case in which with cold snare and galvano-cautery all obstructions were removed, and areas rendered anæsthetic, so that a probe no longer excited reflex symptoms; yet the patient suffered from hay fever with scarcely diminished intensity. Further, it is not seen, perhaps, that there is a possibility of at least a degree of the conditions described being the result (especially in acute hyperæmias) and not the cause, the peripheral susceptibility being an outward expression of an inward state.

We are grappling, says Dr. Holmes, with a difficult problem, because we have to deal with a mucous membrane, one of the most complex structures, containing fibrous, muscular, nervous, vascular, and secreting tissues, and we meet with the same rebelliousness to treatment here as in the vaginal and uterine mucosa. Again, if a patient had typhoid fever with enteric ulcer alone, and the incautious eating of a pancake resulted in diarrhœa or perforation, we should hardly call the pancake the cause of typhoid fever. The cause must be antecedent to the effect, and there must be some morbid condition, the nature of which we do not understand, which is at the bottom of this malady. No specific action of the pollen having been shown, it must be concluded that this acts merely as an irritant, an effect shared in common with any fine dust in sufficient quantity.

Dr. Holmes thinks the confusion of theories has arisen from the fact that the paroxysms have been mistaken for the whole disease. He is inclined to believe that the effects of the different varieties of pollen are mental rather than physical, and that its only activity is that of dust. He believes the disease to be in great part a neurosis, originating in local disease in the nasopharynx, the characteristic manifestation being in part direct, the result of central nervous modifications, and in part reflex, from the action of various mechanical irritants, aided by local and constitutional factors when they exist, and by meteorological and climatic influences.

So long as the cause was held to be an external one, he says, there was little encouragement for treatment and but little progress was made. He is hopeful, however, that with a more comprehensive study of the nasal tissues, and particularly of the nerve supply and nerve endings, we shall learn to master this annoying malady. The treatment, he says, should be directed in two channels:

I. *The Centric Nervous Modifications.*—The internal remedies that yield the best results are quinine in five-grain doses up to the verge of cinchonism, zinc valerianate, extract of belladonna, tincture of opium in five-drop doses, and phenacetine. For the dyspnœa, potassium iodide, ten grains every other night, seems to give better results than the same amount in divided doses. The Chapman ice-bag, filled with cracked ice and applied along the spine for from fifteen to sixty minutes twice daily, has in some cases acted very happily in modifying the symptoms. Care should be taken to make the earlier applications only from ten to fifteen minutes in duration.

Under this heading, says Dr. Holmes, would come removal to a so-called exempt region. The degree of immunity varies with the individual, and sometimes with the patients in the same locality in different years. There is much more encouragement, the tonic effect of a suitable refuge is of more than temporary benefit, as in a certain number of cases the period of the disease is shortened by it, so that the duration of the necessary isolation is much diminished.

II. *The Peripheral Sensibility.*—The local applications may consist of extract of belladonna in the form of a bougie; glycerin and carbolic acid, one to thirty; or coating the surfaces with vaseline—though to some both glycerin and vaseline act as irritants—and applying a four-per-cent. solution of cocaine.

This last-named drug must be applied thoroughly to be of service, and in fact a test experiment may be made which will give an inkling as to the source of the symptoms. If cocaine is applied thoroughly to the nasal cavities alone of a patient with a swollen face, injected conjunctivæ, excessive lacrymation, sneezing, and serous discharge from the nose, all these symptoms will be greatly ameliorated and held in abeyance as long as cocaine anæsthesia is kept up. Of course, the asthmatic symptoms can not be thus relieved. Unfortunately, the constitutional effect of cocaine, the nausea, dizziness, and subsequent depression, are so disagreeable as to prohibit the excessive use of the drug that would be necessary to keep up that effect.

Dr. Holmes has found a two-per-cent. solution of cocaine phenate with boric-acid solution (five grains to an ounce), sprayed into the nose at intervals, of more use than anything else. The carbolate aids the anæsthetic effect and prevents too rapid absorption of the drug.

Of the local treatment by cauterization or removal of hypertrophy, he has very little to say. The means employed are various; the wire loop or snare, or the use of caustics, such as chromic, nitric, or glacial acetic acid, or the galvano-cautery—the severity of the operations ranging from a superficial scarification to a more or less extensive removal of tissue *en masse.* Many cases thus treated have relapsed; some few cures are reported. He does not emphasize these measures, because they should not be considered as treatment specific for this disease. In suitable cases, by removal of diseased tissue, as well as by the reduction of supersensibility and abnormal congestions, the system and part affected are put in the best possible condition, not only for recovery from the attacks of hay fever, but for the maintenance of the general health, by the application of the familiar surgical principle of physiological rest. We are not dealing with something mysterious and inscrutable, depending upon some obscure condition of atmospheric influence or irritation coincident with a mere idiosyncrasy, but with a true morbid condition existing in the individual, the whole nature of which we are yet unable to understand. Hay fever is probably, in its incipiency, a disease of the complex tissues of the nasopharyngeal mucosa, peculiar in that the irritant affects primarily the terminal nerve fibres, the implication of the secreting and vascular elements being secondary, as is shown by the fact that the engorgement of the tissues of the nose and of the face and the excessive lacrymation are largely due to the violent prolonged paroxysms of sneezing. The pathological condition subsequently extends by continuity to the bronchial mucous membranes, and later results in a hyperæsthetic condition of the allied centric nerve ganglia. Pollen, like any other fine dust, is a mere mechanical irritant.

For those afflicted by the disease who hope to outgrow it, Dr. Holmes says that, although he has known one case of cure by a trip to Europe, in a gentleman over sixty; another sufferer, who died at the age of ninety-four, had had the disease every year for fifty years.

Personally, with regard to the treatment, with all due respect to our modern rational and experimental therapeutists and to those of our rhinologists who gouge and burn and saw, in spite of all the remedies that he has recommended for others—for himself, when an attack comes on, as it has for twenty-two years, and probably will for many years more—he shuns drugs and drug stores and specialists, and flees like a bird to the mountains.

The American Electro-therapeutic Association.—At the seventh annual meeting the following officers were elected: President, Dr. Charles R. Dickson, Toronto; vice-presidents, Dr. Frederic Schavoir, Stamford, Conn., and Dr. Caleb Brown, Sac City, Iowa; treasurer, Dr. Richard J. Nunn, Savannah; secretary, Dr. John Gerin, Auburn, N. Y.; executive council, Dr. Robert Newman and Dr. William J. Morton, New York, Dr. William J. Herdman, Ann Arbor, Mich., Dr. William T. Bishop, Harrisburg, and Dr. G. Betton Massey, Philadelphia.

Committees were appointed by the president as follows: *Committee on Induction Coils and Alternators.*—Mr. A. E. Kennelly, F. R. A. S., chairman, Philadelphia, Dr. G. J. Engelmann, Boston, and Dr. Caleb Brown, Sac City, Iowa. *Committee on Constant-current Generators and Controllers.*—Dr. William J. Herdman, chairman, Ann Arbor, Mich., Dr. Robert Newman, New York, and Mr. R. G. Brown, E. E., Brooklyn. *Committee on Meters.*—Dr. Margaret A. Cleaves, chairman, Dr. O. S. Phelps, and Mr. Edwin W. Hammer, E. E., New York. *Committee on Electrodes.*—Dr. Charles R. Dickson, chairman, Toronto, Dr. Lucy Hall Brown, Brooklyn, and Dr. John Gerin, Auburn, N. Y. *Committee on Static Machine and Condensers.*—Dr. William J. Morton, chairman, New York, Dr. William J. Herdman, Ann Arbor, Mich., and Dr. Frederick D. Morse, Melrose, Mass. *Committee on Electric-light Apparatus for Diagnosis and Therapy and the Röntgen Ray.*—Mr. John J. Carty, E. E., chairman, New York, Dr. Frederic Schavoir, Stamford, Conn., and Dr. William J. Morton, New York. *Special Committee on Cataphoresis.*—Professor A. E. Dolbear, chairman, Boston, Dr. Frederick Peterson, New York, and Dr. G. Betton Massey, Philadelphia.

The Marine-Hospital Service and a National Quarantine System.—We were glad to see an editorial on this subject in the *Medical News* for October 30th. The stand taken in the article is, we think, perfectly right.

Every thinking person, unless blinded by personal or local prejudice, says the *News,* must recognize the necessity for a more intimate federal supervision of quarantine and public health than obtains at the present time. The recent conduct of quarantine affairs by local authorities, it adds, is a scandal and a disgrace to civilization.

Fortunately, says the *News,* speaking of the outbreak of yellow fever in the Southwest, the epidemic thus far has made slow progress and the mortality has been comparatively small; but the dread name of the disease has alone been sufficient to terrorize many and has led to brutal encroachment on personal rights, even to murder, and to unreasonable interference with travel, transportation, and trade. The commercial relations of New Orleans with outside communities have been cut off, and business has been stagnant for weeks, causing losses to merchants which already amount to many millions of dollars. From a city in Alabama, where the disease only recently appeared, a banker writes: "The great majority of our people are greatly alarmed and have 'refugeed' in large numbers to more northern places. As a result of this condition of affairs, business is *absolutely paralyzed.*" Similar conditions prevail to a great extent on the Gulf coast from Mobile to Galveston, while the States of Alabama, Mississippi, Louisiana, and Texas are given over to terror and anarchy, masquerading under the name of "local" quarantine.

That this disastrous condition of affairs, says our contemporary, is due to a lack of uniformity in quarantine laws and a want of authority in their enforcement is plain to everybody. Every State, nay, every community having a board of health or health officer, has its own quarantine regulations, which vary much in efficacy and in manner of enforcement. It thus follows that a State maintaining a rigid quarantine against the outside world may be unsuccessful in efforts to exclude the disease, on account of the lax precautionary measures practised by a neighboring State.

The *News* thinks that the origin and course of the present epidemic prove the utter untrustworthiness and inadequacy of local quarantine. Nearly all previous epidemics, it says, have taught the same lesson. A uniform law with adequate authority to sustain its impartial and fearless enforcement, it adds, is the only defense against these perennial invasions, and says that some department of the national government is the proper agent to enforce such a law.

Uniformity and authority, it thinks, can be secured in no other way. The first duty of this branch of the government, however constituted, should be the establishment of a national quarantine worthy of the name. Subsequently it should assume the conduct of matters of public health on a broad and scientific basis.

In the establishment of this new department of public health, says the *News,* we have at hand an available and substantial foundation upon which to build—viz., the Marine-Hospital Service, as was maintained by Dr. Jerome Cochran at the meeting of the American Medical Association in Atlanta in 1896. Few, except those personally interested, says the *News,* know what varied and vital functions this department of the government exercises and has faithfully performed during the last few years. Aside from a hospital service, it successfully manages one half of the twenty-four quarantine stations of our seaboard; it examines life-savers, pilots, and candidates for the revenue service, and inspects immigrants at eight important ports of entry; it has investigated scurvy, cholera, yellow fever, small-pox, and the plague, with special reference to their causation and prevention, and in its hygienic laboratory has studied diphtheria, pneumonia, vaccinia, small-pox, and typhoid and malarial fevers, and has tested various disinfectants; it has instituted inquiries concerning water supplies and the disposal of sewage and garbage in cities and towns, and has investigated cases of water pollution; it has studied foreign and domestic quarantine administration, from which it has collected and tabulated sanitary reports and statistics of great value; and, last but not least, it has been a most active and persistent opponent of the antivivisection legislation which has so long threatened us.

Such, the *News* declares, is the institution upon which it would seem most advisable to build a department of public health. It possesses the confidence of the people, is already organized, has expensive and effective plants at appropriate stations, and simply needs to be enlarged and endowed with new functions and more ample powers to fulfill all the requirements.

Some Points in the Surgical Physiology of the Foot.—Last winter a paper on this subject, by Mr. T. S. Ellis, consulting surgeon to the Gloucester Infirmary, was communicated at a meeting of the Royal Medical and Chirurgical Society of London. It has been printed in the society's *Transactions* and also as a pamphlet; for the latter we are indebted to the author. In the paper he says that it is now nearly thirty years since an accident to one of his own feet specially directed his attention to foot-physiology. A subastragaloid dislocation inward with displacement of the middle cuneiform bone upward and of the cuboid downward are all evident at the present time. The permanent shortening and somewhat flattened sole is shown by impressions made with printer's ink nine years ago. The depression of his plantar arch was ultimately raised by exercises, in application of the bow-string theory which he had conceived. He says that during all these years he has never had any occasion for doubting either the soundness of that theory or its general application to the treatment of acquired flat-foot. He maintains that, as the plantar arch is developed by muscular action, so it may by the same agency be restored. But while he is able to produce plenty of cases in which complete recovery has been due to that agency, and to it alone, he has always felt, until recently, that he could not give a satisfactory answer to such a question as this: If it is true that action of the long flexors (and especially of the flexor longus pollicis) forms the arch, how is it that excessive action, as in the case of dancers, does not overform it? We know, he says, that excessive formation does sometimes occur; it is seen in the condition known as hollow or claw-foot.

In this condition there is, manifestly, perverted function of the toes, of the muscles acting upon them. In Quain's *Anatomy* he finds this: "The flexor and extensor muscles of the toes, including the lumbricales and the interossei, act like the corresponding muscles of the hand." But this, says Mr. Ellis, while true if the toes are used as fingers, is altogether untrue and misleading if the toes are used as toes. Then the *flexors* do not flex; they are *pressors* of the toes against the ground. So, too, the extensors do not extend; they are *tractors* acting from the toes, as fixed points, and drawing the movable body forward. The two sets of muscles are antagonistic in the hand; they co-operate in the foot. The pressing-down action of the flexors is necessary to give fixed points from which the extensors can act. And this does not express the whole truth. The flexor longus pollicis, for instance, plays many parts at the same time.

1. It presses the great toe against the ground, and so forms a point on to which the body can be lifted.

2. In doing this, it assists in so lifting the body. It may act as the only agent in effecting the movement to and sustaining the tiptoe position.

3. It also draws the two extremities of the plantar arch toward each other, so relieving the strain upon the ligaments on the lower side of the tarsus.

4. By tending to include in the plantar arch everything between the final phalanx of the great toe in front and the ankle behind, it lifts up the head of the metatarsal bone, which does not touch the ground line. Thus injurious pressure on that part is prevented; the head of the bone is let down gently when the weight of the body overpowers the uplifting influence.

5. Because of its being attached to the inner side of the foot and to the outer side of the leg, its action, by drawing toward a straight line between the two points of attachment, throws the ankle outward. This serves a double purpose; more room is given for the opposite foot to pass by, and the weight of the body is thrown on to the outer side of the foot and off the inner side, where the weight falls when the sole is flat on the ground.

6. It resists the tendency of the extensor pollicis to lift up the great toe as the latter muscle draws the body forward.

7. When the leg has been drawn forward the distance between the two attachments of the flexor longus pollicis is increased; this muscle (already contracted) is then enabled, by a following-on or continued action, to propel the body onward.

But in order to have a straight toe as a fixed point from which this powerful muscle can efficiently act, it is necessary to have the co-operation of the flexor brevis pollicis, which holds down the first phalanx. The influence of the long flexor, acting alone, is seen by drawing on that muscle in an amputated foot; it flexes the interphalangeal joint, however firmly the foot be pressed downward.

It is in this position that the great toe is represented in two striking pieces of sculpture to be seen side by side in the South Kensington Museum, the "Athlete strangling a Python" of the late Lord Leighton, and the "Teucer" of Mr. Thornycroft. It is also seen in the classic "Discobolus of Myron." But, *pace* the accomplished professor of anatomy at the Royal Academy, Mr. Ellis says that it is not really artistic, because it is neither true to Nature nor expressive of the highest ideal of the human foot, that of a pressing and not of a grasping organ.

The terms *origin* and *insertion* as applied to muscles are so misleading, says the author, that he has often wished them to be abandoned. They suggest that muscles always act *from* their fleshy *origins*, as fixed points, *on* their tendinous *insertions* as movable ones. In the foot especially it is not so; either end may be the fixed point. He always tries to speak of *attachments* only.

Now if the phalangeal attachment of the short flexor becomes a fixed point, it is clear that continued action of this muscle must *tend* to draw down the tarsal attachment at the other end. He holds that it does so act and effectively so.

The plantar arch may be regarded as a construction of movable pieces of bone held in position not only by ligaments, serving as braces, but also by muscles and tendons, serving as bow-strings or tie-rods. It is clear that if only one was present, as in the ordinary bow, and that one drawn too tight, it must tend to overform the arch. If, too, it remained firm, a weight placed over any point of the arch sufficient to weigh it down at that point must cause a corresponding elevation elsewhere. There are, however, other cords extending from one extremity, or a point beyond it, to the other extremity, or to intermediate points in the arch; while some go from one intermediate point to another. It is, Mr. Ellis thinks, also clear that all these, if properly arranged and sufficiently strong, will combine to hold the arch in position and prevent either sinking or undue uprising.

A cord reaching from one extremity to the other could only be, in relation to the arch, a supporter or *formator;* but most of the cords shown, while *formators* of that portion of the arch which they subtend, are controllers or, as he calls them, *limitors* of the particular points in the arch to which they are attached, or beyond which they pass; they tend to *limit* any projection outward at those points which might be caused by action of the *formators.* Now, of the muscles of and acting upon the foot, the tibialis posticus at the one end, and the flexor brevis with the adductor pollicis at the other, fulfill these conditions within that part of the arch which is most yielding, and of which the flexor longus pollicis forms the tie-rod or bow-string. It is true that the flexor brevis and adductor pollicis are not attached to the base of the first metatarsal and cuneiform bones, but they are attached to parts of the tarsus opposite to those points. In a model shown, Mr. Ellis purposely omitted anything to represent the peroneus longus. The interossei are disregarded. He wished to show that the muscles represented in front (flexor brevis and adductor pollicis) were so placed that they would, if strong enough, be of themselves sufficient to hold down the arch and prevent undue formation. Failure of these combined muscles to hold down the first phalanx is the cause of clawlike toes, and failure of them to hold down and limit the formation of the arch is the cause of the hollow foot which accompanies that condition. Moreover, failure to hold down the first phalanx leaves that bone free to rise, and so form an angle projecting downward at the head of the metatarsal bone. Pressure at this point leads to callosities, another attendant condition. In health this is prevented by the fourth effect in action of the flexor longus pollicis.

The head of the metatarsal bone does not really rest on the ground line; the whole structure is balanced on the interphalangeal joint. The great toe is straight, and the plantar arch moderately developed, clefts remaining open between the cuneiform and the bone on either side of it.

On the removal of a bolt in the model, one that retained the cords representing the flexor brevis and adductor pollicis, immediately the head of the metatarsal bone would go down plump on to the ground line, and the great toe become flexed, and only want the influence of the *extensor* to draw it backward and give the complete clawlike character, while at the same time the arch would become much more pronounced, the clefts just mentioned disappearing. Thus, says Mr. Ellis, not only are the features which give to this deformity the alternative names of hollow or claw-foot produced at once, but with them a third becomes manifest: the head of the metatarsal bone projects downward, exactly as seen in the deformity, causing the painful callosities on the sole associated with it. But why, he asks, in this deformity, is the exaggerated arch most marked in the middle line? Because it is in the middle line of the foot that the flexor brevis and adductor pollicis are attached, and these are the muscles to whose failure to control the arch the exaggeration is due; the peroneus longus, which controls the inner margin, does not fail. Other features are also found—a persistent equinus position and an attenuated calf. Now, says Mr. Ellis, if we suppose a growing boy to have boots too short for him, he finds that by walking on tiptoe he is more comfortable; he acquires the habit of relaxing his sole muscles, which, ceasing to act on the toes, allow the toes to contract, just as we find they do in an amputated foot when the long flexors are pulled. This contraction shortens the toes. The foot is also shortened by the bow-string or tie-rod action of the long flexor. Now, although it is true that when the foot is frequently raised to the tiptoe position the calf muscles are developed, yet when the foot is persistently *held* in that position the calf muscles come to serve more and more as ligaments, less capable of relaxation at will. Then the muscles waste from want of *action* as muscles; hence the attenuated calf. The contracted plantar fascia is merely adaptative shortening.

The indications are to restore by operation the form of the foot so far as possible, and especially to correct fully the equinus position, which requires a very pronounced lengthening of the tendo Achillis—to the extent, it may be, of two inches. The more this is done, the more the toes are compelled to come into line with the metatarsal bones in order to reach the ground. This done, the indication is to restore function. The best exercises are those which throw the body backward (when standing) until it is in danger of falling; then in the effort to recover position the flexor muscles must act as *pressors*, in order that the extensors may act as *tractors*. Thus the toes are brought into the fullest functional activity, and, paradox though it seems, the same exercise is good for hollow or claw-foot as for flat-foot. But, indeed, the object is the same in both cases, to restore the functions of the toes, and so to restore the balance of forming and limiting agencies on the plantar arch, of *formator* and *limitor* muscles. It does not, however, follow that forces sufficient to prevent overformation are sufficient to correct it.

Mr. Ellis goes on to explain why, in the stage dancer, the plantar arch is rather flattened than overformed. The sole muscles combining to act as flexors of the first phalanx are specially needed to keep the great toe in a straight line, and two of these muscles are, as he has shown, also *limitors* of the arch. The *limitors* counteract, or more than counteract, the excessive formator influence of the long flexors. Moreover, the fleshy mass of hypertrophied sole muscle fills up the hollow of the sole and increases the appearance of flattening.

The author sums up as follows: Hollow or claw-foot is due to persistent activity of the *formator* agency (long flexor) with failure of *limitor* agency (short flexor and adductor), while flat-foot is due to failure of muscular action altogether. The many and varied and contradictory views which are still given as explaining this latter condition involve, as it seems to him, something like a scandal in a scientific profession, having regard to how common the deformity is. A recent writer says: "The muscles, tendons, ligaments, bones, fascia, and even an improper mechanical construction, have each been considered the chief factors in its production." To the author it is astonishing to find those who admit muscular action as an agent in supporting the plantar arch so contradictory in their views. Here we find paralysis of a particular muscle assigned as a cause; there the division of its tendon is recommended as a remedy. And the special importance of those which he regards as the chief agents are nowhere recognized. He can not recall a single writer on the subject who mentions those which he has so long regarded as bow-strings or tie-rods—the long flexors. In a very recent book on anatomy we are told that the arch is maintained by the plantar fascia, the calcaneo-scaphoid and calcaneo-cuboid ligaments, the tibialis posticus, the peroneus longus, and the tibialis anticus; there is no mention of the long flexors: while a recent French writer mentions the flexor longus pollicis only to say that it can not have any influence on the plantar arch.

In cases of flat-foot where the deformity of the bones is such that the plantar arch can not be replaced, the probability or even the possibility of cure by muscular action alone has been questioned. Mr. Ellis says his answer may be stated thus: "A persistent effort to conceal a deformity tends to cure the deformity." This, one of the many expressions for which he is indebted to Sir James Paget, is but another way of saying that the body tends to retain the form into which it is vigorously and persistently placed, which is obviously the more effective in proportion as it is done in opposition to resistance. We know that muscles developed by use tend to remain taut and firm when not in use. We know that continuous pressure, such as a muscle in a state of tonic contraction would exercise on the surface of a joint, tends to cause wasting, and so to make the pressure even throughout the joint surfaces. The whole theory and practice of physical education, as Mr. Ellis understands it, is based on these laws. The body is maintained in position by the exercise of its function—to move. The agency which moves, supports. The muscles which *by* their action move, *in* their action sustain, and so relieve tension of ligaments. Professor Ogston, who seeks to explain why "writers have deceived themselves regarding their cures for flat-foot," rejects "gymnastic exercises" and other "proposed cures." But even he states that "the normal shape of the bones is admittedly produced not so much by forces within themselves as by normally acting muscles and such like agencies." With "static deformity," as due to want of muscular support, we are familiar. Of "labor deformity," of the injurious influence of excessive muscular action on the form, we also know something. The author asks, then, if it is probable that muscles are potent to develop the form of the body, potent to maintain the form, potent also to deform, and yet impotent to re-form it. He points out, too, that in the treatment of flat-foot we have the advantage of ordinary exercise of the functions of the feet. Every step taken in good walking promotes the cure. The foot is put into a good position against the resistance due to the weight of the body. Surely, then, the success to which he has so often testified is not a matter for incredulity.

In order to understand how troubles result from defects of function, or, in other words, from wrongly directed movements, says Mr. Ellis, it is necessary to realize the position of rest, for the foot as a whole and for the toes. This, as in other parts of the body, is the same in fatigue and in pain. It is that of the least tension of ligamentous structures, least pressure on articular surfaces.

Mr. Arbuthnot Lane, says Mr. Ellis, regards abduction or eversion as the position of rest; but, although, as he states, the feet do turn outward when the body is laid on the back, that is due to the weight of the thighs. "Let any one do as I did on reading Mr. Lane's article," says Mr. Ellis—"lie on his back, fasten a strong strap round the pelvis,and then stuff rolled-up bandages behind the trochanters until they are completely supported. I found then that the inner margins of the feet came into apposition throughout. As the foot hangs from the leg in the standing position it is, in relation to the leg, inverted. This, as I contend, is the position in which the footfall—it ought not to be a foot-placing—does in physiological walking come to the ground. That eight hundred and twenty-four cases of blistered feet occurred on the march to the New Forest manœuvres last year is not creditable to military hygiene. But such things will be until the military march has been reformed. They need not be. To give a proper hold of the ground and so prevent friction, and at the same time to give best support to the plantar arch, and generally the best physiological conditions, the feet must not be everted."

Surely, he says, it is better that the body be drawn forward *along* the line of the foot, of the muscles acting upon it, and *across* the hinges upon which the foot moves, rather than obliquely *across* the line of the foot and *along* the line of the hinges.

The position of rest for the great toe, extended and lying somewhat over the second, and its plane of movement, obliquely downward and inward away from the others, are points of great surgical importance; but he has not seen them noticed. If the great toe is fixed as it is generally fixed in the median-pointed boot, then such movement as it can make is in the natural plane, and when it is still it is really at rest. If, however, it happens to be packed beneath the second toe, then if it moves at all it must be in a plane for which the joints are not adapted. Grinding of the cartilage and consequent irritation are necessary results. Then the condition known as "hallux flexus," "hallux rigidus," or "hallux dolorosus," in varying degree of severity, is apt to follow. The toe is flexed because it is held down beneath the second; it is rigid because movement is painful; it is painful more or less, even when still, because fixed in an unnatural position; it is never in a position of rest. If sufficient muscular inactivity is attained, flat-foot also ensues. But when the great toe is fixed in the former position on the top of the final phalanx of the second toe, it lies there on a sort of bed formed by the final phalanx, which in the so-called *flexion* of the toe lies flat on the ground, while there is an elevation of the joint between the first and second. The toe being held in this position by the great toe and straightening prevented, a hammer-toe results. In any case, but the more important in the hallux flexus position, to set the great toe free is clearly indicated. A boot with a straight inside line is obviously needed. It is more difficult to get patients or surgeons to recognize the need of socks or stockings which have either a corresponding shape or a separate stall for the great toe: the pointed sock, tightened by friction against the side of the boot when the foot is inserted therein, effectually holds the toes in the false position.

The author dissents entirely from the statements of Sir G. Humphry that "the toes are shut up in leather and not used," and that "their services can be spared without detriment to the rest of the frame." It is not so. They are generally used, and, as the smaller ones move in a vertical plane, there is no reason why they should not move together, even in a tight boot. These toes are necessary if only to provide for their corresponding metatarsal bones the protection from pressure on the ground which is served by proper use of the great toe. To the want of this influence are due the callosities on the sole so often found. When the toes are used the skin is free from anything of the kind. To want of this influence are also due the conditions known as "anterior metatarsalgia," "Morton's toe," and the unnamed sufferings in the same region from time to time described. They are all evidences of defective function. The bow-string or tie-rod influence of the flexor longus digitorum on the plantar arch can not be properly exercised unless the smaller toes are efficient. "Show me the condition of the toes in any foot," says Mr. Ellis, "let me see how their functions are exercised, and I will predict the condition of the plantar arch."

Toes which overlap each other can not take such good bearing on which to act as they do when each presses on the ground line. When the extensors act on toes not firmly fixed by pressure downward, they draw them upward, with resulting friction and corns. And, indeed, in almost any defective condition of the foot there is a surgical indication to correct or renew the function of the toes, to compel each of them by active use to, literally, find its level.

All the toes, when at rest, should be straight. The semiflexed position, sometimes described as the normal, is not really so.

Original Communications.

ENDEMIC MULTIPLE NEURITIS (BERIBERI).*

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Endemic multiple neuritis, the Cingalese "beriberi," the "kakke" of Japan, while known in Asia for many centuries, and in modern times prevailing extensively among the native populations of China, India, Ceylon, Japan, the islands of the Pacific, the west coast of Africa (the "sleeping sickness"), certain portions of the coast of Brazil, and the West Indies, has been rarely seen in Europe or in North America.

The infrequency of the disease in the United States, its intrinsically interesting clinical features, and the unsolved problems of its nature and causation, give especial value to a series of seventy-one cases which during 1895–'96 occurred among the patients in the State Insane Hospital at Tuscaloosa, Alabama.

Cases of multiple neuritis had previously occurred in the institution, some six or seven cases in the decade ending in 1895, but none of these were of the infectious type, two of them being due to alcohol, one to syphilis, one to pressure of a large aneurysm, one to mechanical injury during maniacal excitement, and one following a mild heat stroke.

The first case of the endemic or infectious form developed in February, 1895, in a white female patient, who had been admitted some months previous from Opelika, a small inland town in the eastern portion of the State. The case was of moderate severity, and the patient made a good recovery. The disease was not again seen until November of the same year, when almost simultaneously seven cases developed among the white female patients. During the succeeding six weeks four cases made their appearance in the white male wards, and one negro female was attacked. These thirteen cases were of similar type, although varying in severity. The nerves of the legs were chiefly involved; the subsequent atrophy in muscles was quite considerable; there was little œdema; fever and gastro-intestinal symptoms were present in many instances; only one case exhibited heart complications; several of them illustrated very well the symptomatology of the "dry" or atrophic form of beriberi.†

After a period of immunity the disease reappeared in the late summer of 1896, when, following a season of unusual dryness and distressing heat, fifty-eight patients were attacked, fifty-three of these cases occurring during September and five during October, the last of these on the 21st.

The subjoined tabular statement gives the average population of the hospital during the period covered by the outbreak, the number of cases of beriberi which occurred in each class, and the mortality.

Table I.

	WHITE.		NEGRO.		Total.
	Men.	Women.	Men.	Women.	
Approximate number of patients in hospital	460	435	140	165	1,200
Number of cases of beriberi	43	21	6	1	71
Fatal cases of beriberi	11	4	5	1	21
Number of epileptics in hospital	45	15	15	5	80
Number of cases of beriberi in epileptics	25	5	2	0	32

It will be noted that while the negroes suffered in smaller numerical proportion than did the white patients, the disease in them assumed a severe form, six out of the seven cases terminating fatally. The negro women were almost exempt. The six cases in negro men developed among the fifty patients cared for in a detached ward near the main building of the hospital; no case occurred at the "Graystone Farm," two miles from main hospital group, where ninety negro men are colonized. In both races the men suffered more than the women. Direct contagion could not be traced.

A most remarkable feature of the disease was exhibited in its peculiar distribution among the several classes of insane patients. Every one of the seventy-one patients attacked was the subject of a psychic degenerative form of mental disorder. While some of these had previously suffered from chronic renal troubles or other impairment of health, it was, speaking generally, not the physically but the mentally enfeebled who fell victims to the disease. There were eighty epileptics in the hospital; of these, thirty-two had beriberi. The remaining thirty-nine cases occurred in imbeciles, paranoiacs, and those terminal dements showing marked degenerative stigmata. No patient having an acute or curable form of insanity took the disease; no one of the six or seven hundred patients actively employed in work on the farm, in shops, laundry, or elsewhere, was attacked; and no case occurred among the two hundred employees of the institution.

The cases were of many varieties and every grade of severity. The common symptoms were those of neuritis—*i. e.*, muscular weakness, tenderness, pain, paræsthesiæ, loss of deep reflexes, followed by atrophy of muscles, and the electrical reaction of degeneration—accompanied by rise of temperature, gastro-intestinal disturbance, general anasarca, and tachycardia. The cases which occurred in September and October of 1896 were, as a class, more severe than were the cases seen the year previous; the neuritis was more extensive, ofttimes implicating the entire peripheral nervous system, and cardiac complications were frequent. A large proportion of them were typical examples of "beriberi hydrops," a form not seen during the first and milder outbreak.

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* Read before the Medical Association of Alabama, at Selma, April 20, 1897.

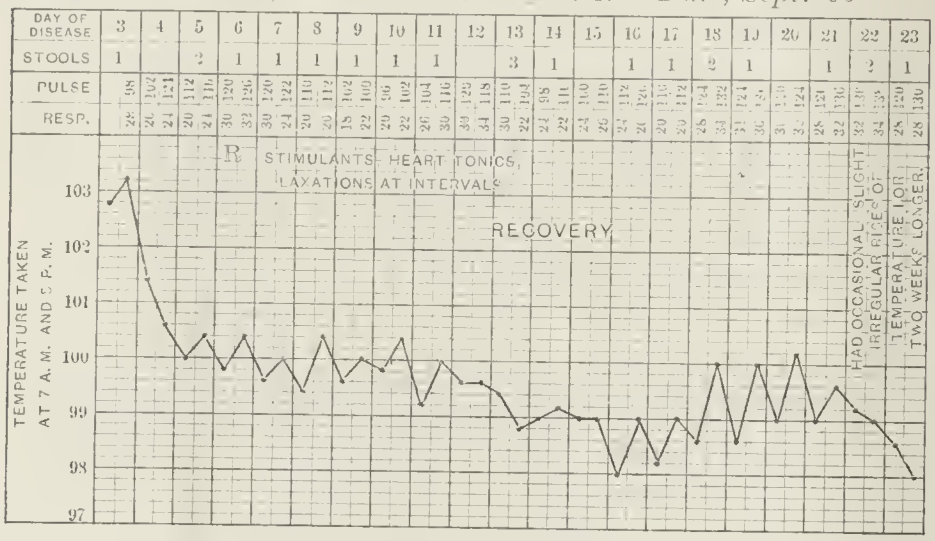
† These cases were reported at the meeting of the Medical Association of Alabama, at Montgomery, in April, 1896, and published in the *Medical News* for October 3, 1896.

A clinical picture of the disease can best be given by a description of cases illustrating its several varieties.

Case I.—White female, thirty-six years old, imbecile, has had epileptic convulsions since infancy, the number of seizures during the past five years averaging about ten in a month.

Early in September of 1896 she had a series of epileptic convulsions during three successive days, and after this lay in bed, stuporous, dull, at times comatose. There was some fever, bowels were constipated, tongue coated with thick white fur, edges red, breath offensive, no desire for food, urine scanty, high colored, and albuminous. After several days it was noted that her heart action was becoming rapid, and her lower limbs, chest, and face œdematous. At this time patient was so stuporous that no satisfactory test of nerve reactions could be had, and it is impossible to date the first appearance of neuritic symptoms. The patient at the expiration of a week came out of the state of coma, and ten days after the initial convulsions above mentioned her condition was as follows: She lies on her back, nearly helpless; moves her arms and head, but can not move her limbs or turn in bed. All tissues are œdematous, from scalp to feet inclusive; all muscles are tender to the touch and relaxed; she groans with pain when the calves of her legs are grasped in the hand. Foot-drop and wrist-drop marked. Tendon reflexes absent. Superficial reflexes retained. Tests of tactile sensation and temperature sense unsatisfactory, owing to deficiency in intelligence of patient. The œdema is great and of a peculiar brawny feel, pitting only upon firm pressure; is most pronounced over the upper portion of the chest, shoulders, and neck, and in the lower limbs. Pulse soft and weak, 130 in a minute; heart impulse accompanied by a distinct thrill; violent pulsation of vessels in the neck. From the heart apex along the sternum, at the suprasternal notch, and over the vessels at the root of the neck, a distinct, loud, blowing systolic murmur is audible, the point of chief intensity being at the left edge of the sternum at the second and third intercostal spaces. Respiration rapid (34), but at times deep and sighing.

Chart I *Disease, Beriberi. Case No. I. Date, Sept. '96*



There had been some rise of temperature from the beginning, but the fever diminished after the first few days (see Chart I). Most of the symptoms increased in intensity, the height of the disease being attained about three weeks after its commencement, when the patient was scarcely able to execute any movement, and the entire body and limbs were exquisitely tender to touch. The plantar reflex had also disappeared, and there was some diminution in the acuteness of tactile feeling. Bowels and bladder moved involuntarily during two weeks at the height of the attack. The patient had also three epileptic convulsions during the time her heart action was rapid and œdema marked, and each time came obviously near dying, the pulse becoming almost imperceptible, cyanosis well marked, and respiration irregular and shallow. Œdema and cardiac symptoms gradually subsided together, the former more rapidly, and not perceptible after the fourth week. The heart action remained above normal rapidity for six weeks. The gastro-intestinal symptoms persisted for about four weeks, and were most pronounced during the second and third, when there were obstinate constipation, tympanites, and complete anorexia. The muscular tenderness and weakness subsided by degrees, most rapidly in the arms and body. There was some—not excessive—atrophy of the muscles of the upper extremities and chest, and a higher degree of atrophy in the muscles of the legs. After two months the patient had no pain, had partially regained the use of all muscles, and was able to sit up. At the expiration of three months she was able to stand with assistance, and in another month to walk. At the present time, six months after the onset of the disease, her lower limbs are smaller than normal and weaker, but the patient walks on a level floor without much difficulty. Superficial reflexes have returned, tendon reflexes are still absent. There is partial reaction of degeneration in the muscles of the calf of her leg and in those of the anterior tibial group.

The treatment of the case consisted in cathartics in the early stage, with opium to relieve pain; digitalis, strophanthus, and camphor when heart symptoms were most prominent. After the acute stage was passed, massage and passive exercise of limbs.

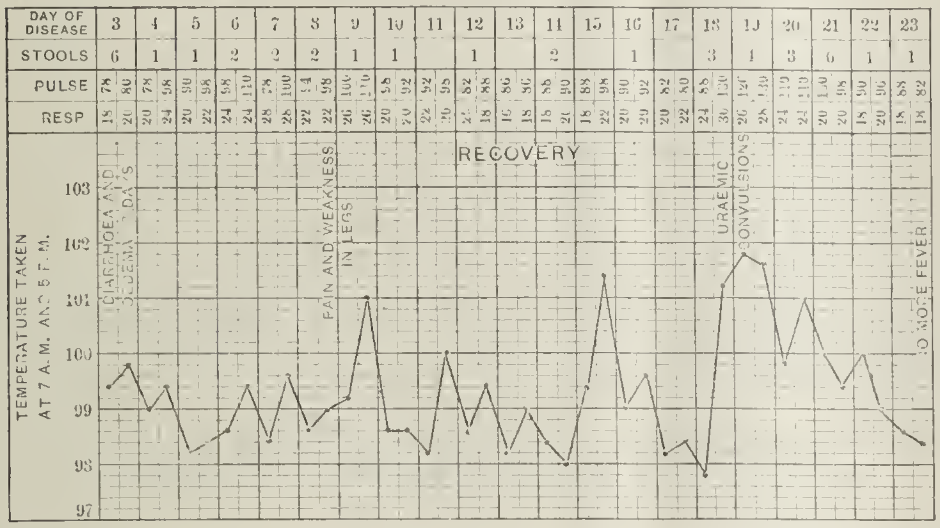
Examination of blood one week after the first appearance of the disease, and at intervals thereafter, did not discover the malarial plasmodium or other parasite. The hæmoglobin percentage was 70. There was a slight increase in the number of leucocytes, and double the usual number of eosinophile cells (noted at first examination only). The urine contained albumin and some hyaline and granular casts during the acute stage of the disease, which have persisted in diminishing quantity until now. The patient had no renal disease prior to this attack.

The above-cited case is a good example of the "wet" variety of beriberi, and fairly represents a large group of cases—nearly or quite half of the fifty-eight cases which occurred in 1896 being of this kind. The next case is of similar type, but terminated fatally before the nervous symptoms reached their full development. It is typical of the so-called "pernicious" form of beriberi.

Case II.—White man, aged thirty-three years, epileptic since childhood, very weak-minded and eccentric.

He had a mild attack of beriberi in 1895, the nerves of the legs being chiefly affected, and the general systemic disorder of mild character. He recovered entirely in a few weeks and remained well until September, 1896, when he one day complained of pain, stiffness, and weakness in his legs. The second day he was in bed suffering pain in all his limbs and in his body, with numbness and tingling in his legs, and some muscular weakness. Tendon reflexes absent; heart action rapid—100 and over; impulse distinct; thrill present. Shortness of breath, and much distress and anxiety. Slight cyanosis. Exaggerated pulsation of vessels of the neck. All heart sounds rough and loud, and at the left edge of the sternum over the pulmonary valve a long-drawn blowing diastolic murmur was heard. There was little or no œdema, but great tenderness of the calves. The third day the heart action was more rapid (140) and weaker, respiration hurried and panting, and there were dyspnœa, great distress, and restlessness, with "pain all over." A loud, blowing, systolic murmur added to the diastolic murmur audible the day before. During the day he grew steadily worse, hiccough set in, and he died seventy hours after the onset of the first symptoms, of heart failure and asphyxia.

Chart II *Disease, Beriberi. Case No. VII. Date, Sept. '96*



He had no fever and no gastric disorder. Treatment consisted of laxatives in the beginning, with heart stimulants and small doses of opium.

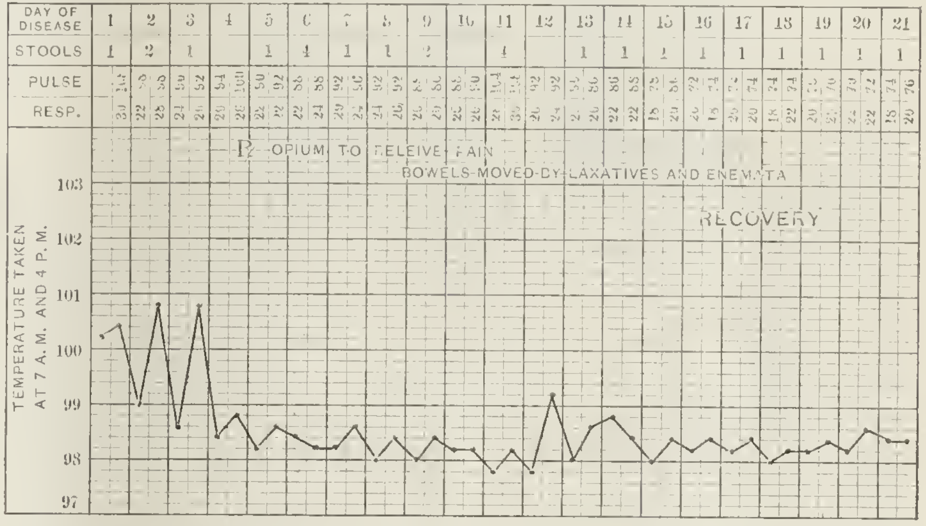
The case next recorded shows the peripheral neuritic symptoms to better advantage, these being neither overshadowed nor masked by the anasarca, tachycardia, and systemic disorder, as is so frequent in cases of the "wet" variety.

Case III.—White woman, thirty-five years old, congenitally deficient in intelligence. In adult life she had an attack of maniacal excitement, which became chronic. General bodily health had been good.

The attack of neuritis began with fever, loss of appetite, furred tongue, offensive breath, and constipation. At the same time the patient complained of pain and weakness in her legs. The symptoms developed rapidly, and on the third day there were great gastro-intestinal disorder, nausea, heavily furred tongue, with red edges and sordes on teeth and lips; legs were paralyzed and felt "dead," as she expressed it, but pressure and passive movements were painful. There was also some œdema.

Shortly after this the pain and tenderness appeared in her arms and body, together with slight œdema in the same area, and at the same time an increase in rapidity of heart action was noted. At the height of the disease, a fortnight after its onset, the nerve symptoms were: Almost complete paralysis of the muscles of the legs, with marked foot-drop; partial paralysis of the muscles of the thighs, body, and upper extremities; hand grasp almost nil; wrist-drop marked; all muscles relaxed and flabby. All tendon reflexes abolished; plantar reflex abolished; pain "almost all over" of an aching, distressing character, worse at night; great tenderness of muscles; partial anæsthesia of the skin of the legs, loss of acuteness of tactile feeling; delay in transmission of painful impressions. The patient's constant complaint was that her "legs felt dead." The pain subsided after three weeks, but tenderness on pressure persisted for several weeks longer. The œdema was general, but not excessive, and subsided after two weeks. The heart action remained rapid for six weeks, and during a portion of this time there was a distinct blowing systolic murmur at the apex and along the sternum. The vessels of the neck throbbed violently, and the pulse at wrist was soft and weak. The gastro-intestinal symptoms were about what are seen in a constipated typhoid case, and persisted for five weeks. Temperature fell to normal in less than a week, however (see Chart III). There was at no time much distress in breathing, although respiration was abnormally rapid. Urine contained albumin and tube casts throughout the attack, and during the acute stage was scanty and high-colored. As œdema subsided, atrophy in the muscular tissue became noticeable and reached an extreme degree in the legs. The muscles of the body and upper extremities were also atrophied, although less than those of the legs.

Chart III *Disease, Beriberi. Case No. III. Date, Sept. '96*



Electrical examination after the acute stage showed typical reaction of degeneration in the muscles of the arms, forearms, hand, shoulder, and chest. The completely paralyzed muscles of her legs refused to respond to the faradaic current, or to the galvanic, until power of motion was partially regained, when moderately strong currents gave the usual reaction of degeneration complete.

The patient remained practically helpless in bed for three months, slowly improving during the latter portion of this time. Power returned first in the muscles of her arms and body, then very gradually in those of her legs. Seven months after the attack, however, her legs are still small, weak, and the patient is unable to walk, although she stands alone. Tendon reflexes are still absent.

A striking feature of the disease was its variability in mode of onset. Some cases began suddenly with fever and gastro-intestinal irritation, as is commonly seen in the acute infections, the local neuritic symptoms appearing either simultaneously or after a few days. In other instances the onset was insidious, the initial vague aches, pains, and discomfort gradually crystallizing into the clinical picture of neuritis without fever or general systemic disorder, it being in many of these cases impossible to date the commencement of the attack. In still other cases the initial symptom was suddenly occurring dyspnœa, with tachycardia and violent pulsation of the vessels of the neck; œdema of feet and ankles was in others the first indication.

The temperature was in about half of the cases elevated in the beginning, but usually subsided to normal within a week or less. In a small proportion of the cases there was no fever for some days after the local symptoms of neuritis were well established. In a still smaller group there were throughout the disease irregular rises of temperature, evidently due in most cases to intercurrent complications (see Charts I to V).

Chart IV *Disease, Beriberi. Case No. XI. Date, Sept. '96*

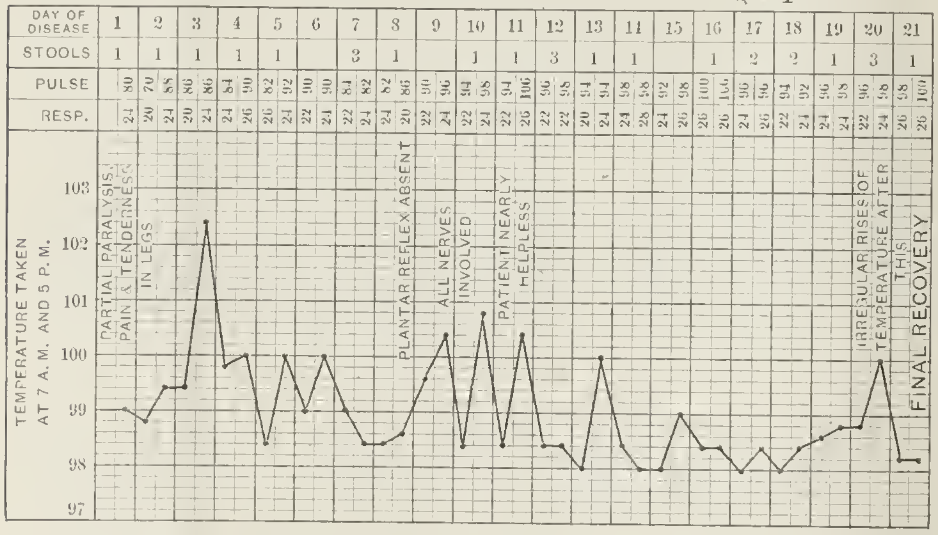
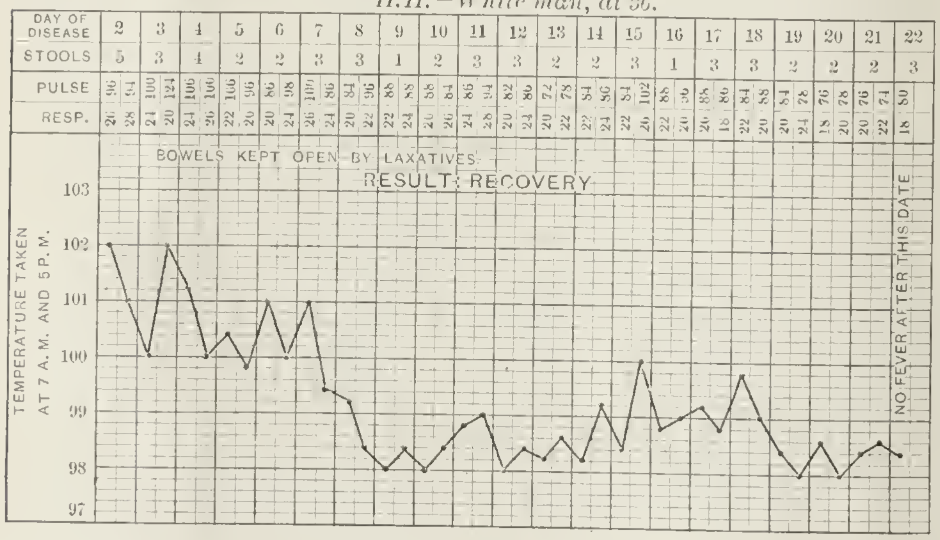


Chart V *Disease, Beriberi. Case, No. XV. Date, Sept. '96*

H.H.—White man, at 36.



In most of the febrile cases, as well as in nearly all of those in which the neuritic symptoms were severe, there was marked disturbance of the digestive apparatus, consisting in anorexia, nausea, offensive breath, a heavily furred, raw, red-edged tongue, with, in some cases, gaseous distention of the intestines and much tenderness on pressure over the abdomen. Constipation was the rule, although in one or two cases there was diarrhœa. In some instances this gastro-intestinal disorder formed the most prominent feature of the case, quite overshadowing the local neuritis. These cases resembled a typhoid fever, minus the typhoid temperature. Where they appeared together, the fever usually subsided much sooner than did the digestive disturbance. Neither the fever nor the gastro-intestinal symptoms were seemingly essential features of the disease, since cases exhibiting all of the milder nerve symptoms remained free from systemic disorder throughout the course of the disease.

The clinical manifestations of inflammation of the peripheral nerves varied in intensity, distribution, and character, but always consisted in weakness, perversion, or abolition of function of the affected nerve trunk. In all cases the disease began in nerves of the legs, the peroneal being first and chiefly involved; and in about one fourth the neuritis was confined to the legs. In the remaining three fourths of the cases the disease extended by more or less rapid upward progression to the nerves of the trunk and the upper extremities. Some of the rapidly advancing cases presented all of the symptoms of acute ascending or Landry's paralysis. In a small proportion of the cases the entire peripheral nervous system seemed to be almost simultaneously attacked, œdema and tachycardia accompanying ("pernicious" form of beriberi). In a few instances the nerves of the face were implicated; in one case aphonia resulted from participation of the laryngeal branches of the vagus, and in one case there was great difficulty in swallowing liquids, probably from the same cause. In one patient the disease, beginning in the legs, eventually became more severe in the upper extremities, the man being able to walk while the arms were almost useless.

The sensory symptoms were frequently those to first attract attention—pain and tenderness in the area of distribution of the affected nerve, at first aching and not very severe, but becoming progressively more intense, and at its height very distressing. The pain was not darting nor lancinating, but boring, aching, stinging, burning, often worse at night, and usually increased by movement. Accompanying the pain were various paræsthesiæ—numbness, tingling, "creepy feelings," sensations of "bugs crawling" on the limb, of "ants biting," as if "legs were asleep," as if "legs were dead," etc. In late stages of severe cases there was diminution in acuteness of tactile perception, but in no case complete anæsthesia. In several cases distinct delay in transmission of painful impressions was noted. Tests of sense perception in the extremely demented and imbecile class with which we had to deal were often impossible, and always difficult and unsatisfactory, and no reliable data as to muscular or pressure sense were obtained. The temperature sense was not notably disordered in the few cases in which tests could be made. In mild cases and in the early stages of severe ones the skin reflexes were not abnormal; after the more severe cases were fully developed there was usually complete abolition of these reflexes in affected portions of the body. The tendon reflexes disappeared early, and were absent throughout the course of the disease in practically every case. They did not reappear for some time after recovery was apparently complete, the patellar reflex often remaining absent for months after the patient was up and able to walk.

The motor symptoms, appearing with or shortly after the sensory disorders, were: Stiffness in muscles supplied by affected nerves, progressing through simple weakness and disinclination to exertion to some degree of paralysis, this in severe cases becoming complete. In cases in which the disease had an extensive distribution the patient was ofttimes unable to move hand or foot, or to turn in bed. The affected muscles became relaxed, soft, and mushlike, and, as above mentioned, very tender on pressure. The severity of the pain and degree of paralysis bore a close relationship, but, whereas the pains and other sensory disorders passed away after a few weeks at most, the motor paralysis was in all cases followed by a corresponding degree of atrophy in the muscles, with weakness or partial paralysis, which persisted for weeks and months. This atrophy, while imperceptible in some of the milder cases, was in the severe ones a prominent feature, the limbs being sometimes reduced to skin and bones, with a little intervening fibrous tissue. The atrophy was most pronounced in the legs, but also, in some cases, well shown in the upper extremities, shoulders, pectoral, and other trunk muscles. Wrist and foot drop were typically shown. In a few of the most severe cases there was some contracture, which in two cases threatened to prove permanent in the legs, producing a distinct talipes equinovarus in both, with, in one, stiffening of knees, due to contraction in the muscles of the posterior aspect of the thigh.

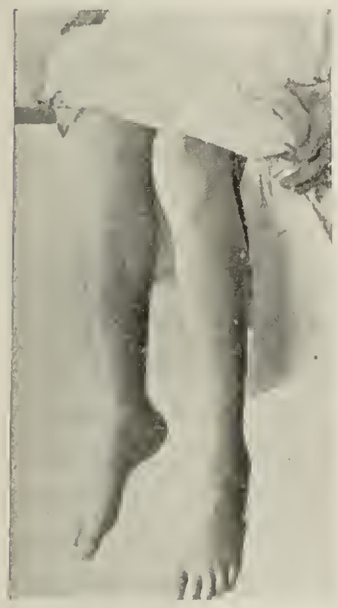


Fig. 1.—Beriberi, late stage, showing atrophy of muscles of legs and foot-drop.

In all cases in which there was noticeable muscular atrophy the electrical reaction of degeneration was present, this consisting in diminution of faradaic excitability on both muscle and nerve, the muscles in severe cases showing no response to an interrupted current so strong as to be unbearably painful. With the galvanic current a reversal or some modification of the law of contraction was commonly obtained, the usual result with currents of moderate strength being a slow vermicular contraction, and ACC = KCC > AOC > KOC. In one case the following unusual result was given: KOC = KCC = AOC = ACC. There was no increase in galvanic excitability, as a rule, but often decided diminution of the same, with at the same time fairly well-marked DgR. These abnormities disappeared as the muscles regained their function.

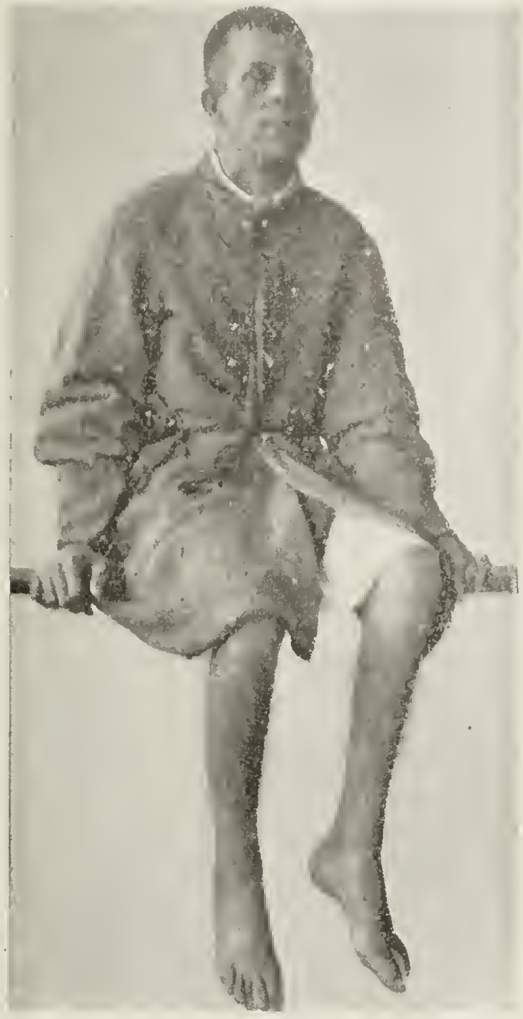


Fig. 2.—Beriberi, late stage. Extreme atrophy of leg muscles, with partial contracture.

Vasomotor and trophic disorders, other than the œdema in affected parts, which is referred to below, were not frequent. In one case there was a herpetic eruption on the legs; in another, large, ulcerlike sores appeared on the legs. In some of the cases there were, after the acute stage had passed, coldness and sluggishness of circulation in the affected extremities.

Almost without exception the portions of the body supplied by affected nerves grew œdematous, this swelling, oftenest of ankles and legs, being occasionally the first symptom to attract attention. The situation in which first noticed, its degree, and the order of its appearance in different portions of the body, paralleled the development, intensity, and progression of the neuritis—*i. e.*, it began in the feet and extended upward; it was slight, local, and transient in mild cases, was extreme and persistent in the severe ones, some of which showed great anarsarca, extending from the scalp to the soles of the feet. This œdema was in some instances soft and readily pitted, in others dense and brawny. The face, neck, shoulders, and chest were often prominent situations. Effusion into pleural cavities, one or both, was noted in half a dozen cases, but fluid in the pericardial sac was not diagnosticated during life nor found in any one of the seven fatal cases subjected to post-mortem examination. In the severest cases the œdema endured for not longer than four weeks. It occurred as a consequence of disease in the vasomotor nerves rather than as a result of renal disorder, although in some cases this latter may have contributed somewhat. All the patients attacked being old residents of the hospital, the state of the renal function prior to onset of the neuritis was fairly well known, and one to a half dozen or more uranalyses, made at different times, had been recorded. Many of the patients had suffered from mild chronic forms of renal disorder, and in a small proportion of them albumin and casts existed in the urine in some quantity. In say one half of the cases—the milder half—no exacerbation of renal disease nor development of any perceptible degree of renal inadequacy was detected. In the other half—including the severe cases and those in which there were fever and gastro-intestinal disturbance—there was some evidence of renal irritation or disease, shown by the appearance of albumin or increase in its amount, together with increase in number of casts. These abnormities in the course of a few weeks returned to their former stage, or disappeared entirely. Only one case had uræmic convulsions, and even in this one the albumin and casts disappeared from the urine after two months.

It was, as is stated above, in the cases in which nerves of trunk and upper extremities as well as those of legs were affected that this œdema was most marked, and it was in the same class of cases that implication of the respiratory and cardiac nerves occurred, practically every case in which the nerves of the body and arms were involved showing some cardiac disturbance. About forty of the cases which occurred during 1896 showed the heart symptoms very typically (*vide* Cases I and II above).

It will be noted that the chief and earliest symptom of heart implication is rapidity of action, with weakness. This begins about or shortly after the time the nerves of the body and arms become attacked—sometimes constituting an early or even the first symptom of the disease, in others coming on several days or a week or two after the first appearance of the neuritis in the legs. In the milder cardiac cases only rapidity and weakness of pulse are noted. In the more severe and typical cases the pulse-rate increases, the apex beat becomes more pronounced and is attended by a peculiar thrill. On auscultation, a loud blowing, systolic murmur is heard over the front of the chest, and widely diffused, in certain cases resembling the *bruit de diable* of exophthalmic goître. The murmur is sometimes loudest at or near the apex; again, it is most pronounced over the pulmonary valve, at the left edge of the sternum; in a small proportion of cases a diastolic murmur coexists. At the same time violent and exaggerated pulsation of the vessels of the neck forms a striking feature of many cases. Accompanying these physical signs there is usually a sense of weight or oppression in the chest, rapid, panting respiration, and dyspnœa, the symptoms being in some cases most distressing and terminating in death in a few days (as in Case II above).

The rapidity of heart action in these cases will average about 130, but may show a higher rate. In one extreme case the pulse for three weeks ranged between 180 and 210, the patient suffering surprisingly little dyspnœa most of the time, and finally making a complete recovery. In most of the cases there was moderate tachycardia, with murmurs and venous pulsation, without much dyspnœa. In the cases showing general anasarca the dyspnœa, anxiety, and mental distress were often most pronounced. Cyanosis was occasional only. Some fourteen of the twenty-one fatal cases died directly from heart failure, at times varying from three days to six weeks after the first symptoms of neuritis appeared.

Many of the patients, in particular those suffering from heart irregularity, with dyspnœa and general anasarca, were blanched and pale, presenting an appearance of great anæmia, which, however, examination of the blood in about twenty cases failed to confirm. With Fleischl hæmometer no case showed a lower percentage than sixty, and the majority ranged from seventy-five to ninety, which is fair average for supposedly healthy persons in this part of the world. The number of red corpuscles, counted by Thoma-Zeiss instrument, was also not noticeably diminished. In cover-glass preparations, taken during the acute stage, a leucocytosis was in several cases shown, and in two instances there was a marked increase in the eosinophile cells, which increase subsided after a few days. A large number of both fresh and Chenzinsky-stained cover preparations were examined in acute and chronic stages, with especial reference to the presence of the malarial or other plasmodium; such organisms, however, were not discovered in any instance.

While some—a half score, say—of the cases were mild and of short duration, the disease, taken collectively, is the most serious, fatal, and distressing with which we have ever had to contend. Of the seventy-one patients attacked, twenty-one died, and all save ten or twelve, which may be classed as mild, were unable to walk for from two to four months, and were for weeks confined to bed with digestive and cardiac disorder. At the expiration of eight months there are, as above mentioned, still two patients unable to walk and with the danger of permanent contraction and loss of motility in legs.

In the fatal cases, one patient died of pulmonary tuberculosis, one of pneumonia, two in the *status epilepticus*, fourteen directly from heart failure, and the remaining three from a combination of causes. The complications hastened or insured a fatal termination in six or seven cases.

(*To be concluded.*)

ABSTRACT OF REMARKS ON
ATROPHIC ENDORRHÍNITIS.*

By JOHN N. MACKENZIE, M. D.,
BALTIMORE.

In order to confine this discussion within reasonable bounds, I shall address myself strictly to the pathological anatomy of so-called atrophy of the intranasal structures, as announced on the programme. Let us consider the problem from a purely anatomical standpoint and inquire what is the nature of the structural changes found, and in what order do they appear?

I wish at the outset to disclaim any idea of opening the ozæna question. That has been done by Dr. Casselberry in his paper just read. As every gynæcologist has his vaginal speculum, so every rhinologist has his theory of the causation of ozæna. Speculations on the subject are as multitudinous as the stars. One thing, however, should be remembered—ozæna is not atrophy, although frequently a symptom of that condition. It is only in this way that it is at all related to our subject.

At the beginning of our inquiry I would lay stress upon the fact (to look at the subject from a novel standpoint) that in the condition involved in our conception of so-called hypertrophic and atrophic nasal catarrh we are dealing not simply with an inflammation of a mucous membrane, but with definite structural changes in an important organ of respiration, using the term organ in its highest physiological sense. This organ of varied function consists anatomically essentially of myriad vessels and blood spaces in wonderfully exquisite correlationship, bounded on the one side by periosteum and on the other by mucous membrane, set in a network of connective tissue containing glands, muscle, and elastic fibre, by which is rendered possible the alternate erection and collapse of the tissues which is essential to its proper and complete discharge of function. Call these bodies by whatever name you may—erectile bodies, corpora cavernosa, nasal lungs—we have a definite peculiar anatomical arrangement of tissues endowed with specific physiological function and fulfilling a manifest and manifold destiny in the organism.

A great deal of confusion surrounds the subject under discussion from (1) a loose and inexact use of the term atrophy, as applied to the changes under review, and from (2) failure to distinguish between the different forms of atrophy which may affect the nasal mucous membrane, and the causes that conspire to produce them.

A lazy disregard of certain elementary facts in pathological anatomy has thus led to hasty generalization and inadequate hypothesis.

Atrophy is the diminution in size of an organ, the result of diminution in size and disappearance of the structural elements of the tissues. In this process the highly specialized portions suffer, while the connective tissue may not show any wasting—indeed, is often notably developed in excess. There are two forms of atrophy—simple atrophy and atrophy with degeneration. Simple atrophy may be the result of (1) excessive waste, (2) impaired nutrition, (3) pressure, (4) impaired functional activity, or, finally, (5) imperfectly defined trophoneurotic changes. The consideration of simple atrophy of the intranasal structures opens up a vast field of almost boundless horizon which has been heretofore very imperfectly explored. Except perhaps in the case of pressure atrophy, we know little or nothing of the subject. It is, of course, conceivable that simple intranasal atrophy may be produced by all of the causes indicated above; but we have very little exact knowledge concerning it. The atrophy of which I shall speak is not a simple atrophy, but an atrophy with degeneration. The very use of the term atrophic *rhinitis*, or, more correctly, *endorrhinitis*, excludes the idea of simple waste, and presupposes that of degeneration—the degeneration of an inflammatory process. Just here let me say that the use of the terms "hypertrophy" and "hyperplasia" as expressive of the changes found in chronic intranasal inflammation is unfortunate. True hypertrophy and hyperplasia, if they exist, must be exceedingly rarely found. If, then, we are to retain them, we must not insist on a too rigid application of their definition as given by the pathologist.

It was in attempting to bring order out of the existing chaos of terminology that some years ago * I proposed to substitute the term *cirrhosis* to denote the changes found in the condition under discussion. Here, too, we have another unfortunate term for which we have to thank Laennec. Of all its various synonyms, sclerosis is perhaps the most exactly descriptive. Cirrhosis or sclerosis is a chronic inflammation in which atrophy of the specific tissues is associated with hypertrophy of the connective tissue. It begins either acutely or more insidiously, and is characterized by atrophy and degeneration of the gland tissue, by hypertrophy of the connective tissue, by cellular infiltration, by the formation of granulation tissue, and by obliteration of old vessels and by the formation of new (Ziegler). In so-called intranasal hypertrophy and atrophy we have two forms, or, to speak more accurately, stages of the sclerotic process—viz., a stage of hypertrophic and a stage of atrophic sclerosis—and these terms I would propose to substitute for those in common use. Instead of speaking of a stage of hypertrophy and a stage of atrophy, therefore, we would indicate the condition found by the terms hypertrophic and atrophic sclerosis.

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* Read before the American Laryngological Association at its nineteenth annual congress.

* Some Notes on the Pathology of Intranasal Inflammation. *Medical News*, Philadelphia, October 4, 1884.

Now in regard to the ætiology of the process. Apparently the most common cause is the *chronic irritation produced by inflammation of the nasal mucous membrane,* the chronic catarrh extending to the interstitial tissue of the erectile organ. This chronic catarrh may or may not be originally due to the action of micro-organisms.

In another class of cases the irritation causing the sclerotic process may reach the nose through the blood, as an *infection,* as in the case of syphilis and tuberculosis, or as an *intoxication,* as in the case of alcohol.

That the atrophic or, to speak more exactly, the sclerotic process owes its origin to the constant contact of pus with the nasal mucous membrane, either as a product of disease of that structure or in the form of discharge from the accessory sinuses, is a view that has been gravely maintained by more than one observer. In all pathology there is no parallel to such a condition.

What is the nature of the sclerotic process? Are the changes in the connective tissue primary or secondary? Do the highly specialized elements suffer first and disappear, to be replaced later by a connective-tissue scar, or is their disappearance due to a primary contraction of an inflamed and hypertrophied interstitial tissue? It will be the task of the future to answer these questions. In other organs of the body—as, for example, the liver and brain—it is probable, though not yet completely proved, that in the cirrhotic process the highly specialized tissues suffer first. In the liver, especially, it seems probable that the disease originates in the hepatic cells and that scar tissue subsequently takes their place. It is quite possible that this may be the chain of events in sclerosis of the intranasal tissues, especially in those cases in which the irritation producing the sclerosis reaches the erectile organs through the blood either as an infection or as an intoxication. In cases, on the other hand, which presumably result from an extension of inflammation of the mucous membrane to the interstitial tissue of the turbinated bodies, the connective-tissue changes are doubtless primary, and the highly specialized elements disappear as the result of the contraction of the newly formed interstitial tissue. Not to mention other evidences of its contraction, the frequent presence of cysts and the sæpta formations which I have described elsewhere * certainly point to the presence of a strong constricting force. That the highly specialized tissues do not, however, always disappear by virtue of such constriction is shown, I think, in the specimens taken from the ethmoid region exhibited at the last meeting of this association.† Here the glands are being destroyed by young granulation tissue.

In considering the order of appearance, the chronological relationship of the two stages of nasal sclerosis, let us first inquire, Is the process ever *ab initio* atrophic?

I do not by any means wish to deny the possibility of such an occurrence. It is quite conceivable, indeed, that, as the cirrhotic changes sometimes occur without antecedent hypertrophy in the liver, so they may originate in the nose in a similar manner. It is also possible that the sclerotic process may take its departure from diseased conditions of the periosteum and may not be heralded by apparent increase in volume of the tissues.

The problem is a difficult one for the reason that the affection often develops very insidiously, and its stage of inception and course are therefore imperfectly known. While we can not dismiss from consideration the idea of primary degenerative atrophy of the intranasal tissues, the clinical and pathological facts in our possession indicate that, if it exist, it must be reckoned among the exceptions to the rule.

There is no direct histological or clinical proof that the sclerotic process is atrophic from the beginning. No man has demonstrated microscopically or on the cadaver, nor has occasion ever arisen, except in a few doubtful cases, for clinical demonstration of the possibility of such an occurrence. In reply to the stricture of Dr. Casselberry that ozæna often occurs at a period too early in life to warrant the assumption of a preexisting hypertrophy, I would say that ozæna and atrophy are not convertible terms. Ozæna is not a disease *per se,* but a symptom of a number of pathological states. As is well known, it is often present in hypertrophic catarrh. Ozæna in children does not necessarily imply atrophy. In children, too, as in the adult, the transition period from hypertrophy to atrophy may be very brief, the wasting occurring rapidly from malnutrition, due to constitutional taint or other causes. The congestion or hypertrophy that precede the stage of complete waste, too, are not always strikingly marked as regards the naked-eye appearances, and are therefore liable to be overlooked.

Assuming that atrophy occurs soon after birth, it is possible that it may have been antedated by a catarrh *in utero.* This is, of course, assumption, but not extravagant speculation.

That the atrophic is usually preceded by a hypertrophic stage is rendered highly probable from a number of clinical and pathological facts. If the clinical history is accurately taken, it will often point to a preexisting catarrhal hypertrophic condition. The hypertrophy—that is to say, the swelling—need not necessarily by any means be very pronounced. Why it should in one case terminate in fibrosis leading to the formation of the dense, so-called "hypertrophies," or to formation of nasal polypi, and in another case terminate in atrophy, are questions as yet unsolved.

The rapidity with which the hypertrophic passes into the atrophic form is proportionate, in all probability, to the possession of some constitutional taint, such as, for example, the congenital or acquired form of syphilis. The early appearance of atrophy in some cases is dependent doubtless, too, upon certain modes of life and other conditions which influence the rate of progress in simple inflammation in general. I have seen it occur with rapidity after the profound impression made upon the nutrition of the parts as the result of acute systemic disease.

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* *Transactions of the American Laryngological Association,* 1885, p. 159.

† *Transactions,* 1896.

If the patient is not under observation from the outset, it may be difficult to establish with certainty the chronological relationship of the two stages; but, so far as my observation goes, I have never been able to satisfy myself of the independent origin of the atrophic form.

The pathological history of the process is, moreover, that of the conversion of hypertrophic changes into those of an atrophic form. In the rhinoscopic picture, in the microscopic section, the processes of hypertrophy and atrophy are found side by side. More than that, the atrophic changes are more pronounced in situations in which the catarrhal inflammation originally developed. Thus, for example, if the disease originates as a catarrh of an accessory sinus, the atrophy is more pronounced in the latter situation, the nasal mucous membrane proper presenting evidences of simple or hypertrophic catarrhal inflammation. If, on the other hand, the disease originate in the nasal fossæ, the morbid condition of the sinus, if such exist, is that of simple or hypertrophic inflammation. Finally, as the hypertrophic variety almost always begins in the respiratory portion of the nostril, so in the atrophic form, the region of the inferior meatus, the classical seat of atrophy, is the first to be destroyed.

Weighty evidence in support of the position that atrophy is usually preceded by hypertrophy in cases that follow catarrhal inflammation is furnished by the microscope. Here the processes are found side by side in the section, or portions of the membrane show signs of atrophy, while in others, when the disease is less advanced, hypertrophic changes are discovered.

The above considerations encourage the belief, I think, that in *sclerosis which is the result of intranasal irritation* the atrophy is usually preceded by a hypertrophic or congestive stage.

I have not elaborated the propositions which form the basis of my remarks this morning.* Until they can be successfully overthrown it may be well to accept them, provisionally, at least.

In the absence of direct histological and clinical proof of such a condition; in view of the rapidity with which, in some cases, the hypertrophic variety passes into the atrophic; in consideration of the many obvious difficulties in the way of certain historical data in its favor, and in the light of anatomical investigation, the question "Is intranasal sclerosis ever *ab initio* atrophic?" must, for the present at least, be answered in the negative.

The Alumnæ Association of the New York Hospital Training School held a fair in the administration building of the hospital on Thursday and Friday, the 18th and 19th inst.

THE
TREATMENT OF ATROPHIC RHINITIS.*

By CLARENCE C. RICE, M. D.

I AM sure we all feel that nothing remains to be said concerning the ætiology and pathology of the disease now under discussion. This part of the subject has been very exhaustively stated by the gentleman preceding me, and yet I should like to say that I am so thoroughly convinced that atrophic changes in the nose and throat are intimately dependent, if not upon constitutional taint of some kind, at least upon unhealthful occupation or unsanitary manner of living, that it is necessary to classify the treatment of atrophic rhinitis under the double heading of constitutional and local. I know that constitutional relationship to this apparently local atrophy is strenuously denied by many good observers, but when we recall that this disease is so much more frequently seen among dispensary patients than in private practice, and often present in all the children of a family; and when we find that it is this form of catarrhal trouble which commonly attacks the anæmic, ill nourished, improperly cleansed people working at trades within doors, I am sure we can not but feel that something more than local causes are to blame for atrophic rhinitis. I speak of this because I feel that we have in the past been too anxious to discover some new drug which would prove of specific benefit in restoring the normal nasal secretion and have paid too little attention to the general condition of the patient. I am willing to be frank enough at the outset to say that if it were left to me to choose as between the value of the benefit to be obtained in the treatment of atrophic rhinitis by the use of all the local medications which have ever been employed, or, on the other hand, if I were given the opportunity to put my patient at out-of-door work and under favorable hygienic and sanitary conditions, I certainly should choose the latter expedient, asking only that the patient should be instructed to cleanse the nose with suitable washes. Perhaps this is as proper a time as any to say that I have had the opportunity during the last two years to send, among a large number, eight persons, men and boys, who were suffering from advanced atrophic disease of the nose and throat, to a stock farm in New Jersey, where they were employed as ordinary farm hands. These men were taken out of factories and workshops of various kinds. They had been treated before going into the country with the ordinary remedies for atrophic rhinitis and with the usual small amount of benefit. Their improvement commenced as soon as they were turned out of doors. Such an observation as this proves a great deal. The general health of these people was, of course, improved by this change of occupation and manner of living. The country life, too, did not afford the opportunity nor the temptation for so large a use of alcohol and tobacco. I consider cigarette-smoking a very potent factor in the causation of atrophic changes in the nose. I am not sure but that the American Laryngological Association owes and could perform a great duty to the community by endeavoring to send advanced cases of atrophic nasal and throat disease from city workshops to country farms. The benefit would be far more reaching than simply the local benefit to these people alone. I am sure that no member of this association believes for a moment that the effect of any drug upon the nasal mucous membrane compares in importance with an increased amount of pure oxygen, proper habits of living, etc.

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* For an elaboration of the subject, see the article in the *Medical News* already referred to, and also the chapter on Cirrhotic Rhinitis in Burnett's *System*, vol. i, 1893.

* Read before the American Laryngological Association at its nineteenth annual congress.

Again, before speaking of the treatment of this disease, let me say that we find in our cases two widely different local appearances, depending upon the general condition of the patient or owing to difference in habits of living. In both atrophic changes are present, but the pale, anæmic, parched mucous membrane of the working girl presents a very different aspect from the mucous membrane of the man of full habit, which is as dry, but is congested and thickened by the immoderate use of alcohol and tobacco. The two conditions require different local treatment and general advice.

In looking over the literature of the subject somewhat, we find that although many drugs have been employed in the treatment of atrophic rhinitis, yet they have nearly all been used upon the general principle of producing what is called by some "stimulation," by others "irritation." These two terms, I imagine, are alike in kind, differing only in degree.

We find that the German school, clinging as usual to their belief that this disease, like all others, is caused by the presence of unusual kinds of bacilli or bacteria in unusual numbers, advocate the use of solutions of bichloride. Koch [*] tells of the great benefit and complete cure in some cases of atrophic rhinitis by the use of a spray of 1-to-4,000 bichloride.

Löwenberg always uses antiseptic douches of mercuric bichloride (1 to 4,000), having first removed the crusts with warm saline solution.

Thost [†] applies bichloride of mercury in a solution of 1 to 2,000 with a camel's-hair brush twice a day. He remarks that this treatment has been in vogue for a number of years and has always produced good results.

Of the Italian school, Cardone [‡] (professor at the University at Naples), believing that atrophic changes in the nose are similar to the process of pneumonia and dependent upon the same bacilli, uses the bichloride in a solution of 1 to 2,000, giving internally iron and cod-liver oil. And Marano bases the same treatment upon the same belief.

One of our fellows, Dr. Mackenzie, of Baltimore, has made use of a solution of mercury bichloride, two grains to a pint of water, by atomization, and recommends the same as a gargle and nasal wash.

Belfanti [*] says that having used with great benefit the diphtheria antitoxine in ozæna, he employed it also in atrophic rhinitis, and to his great astonishment obtained very favorable results. He has not as yet tried the treatment long enough to publish his cases.

I need not take the time of this association to repeat what has already been said here in regard to the use of electrical applications to the nasal mucous membrane in the treatment of this disease. I believe Dr. Shurley,[†] in 1880, was the first to recommend it, but the treatment has been used to quite a large extent by a number of the fellows of this association, and they can tell us how far they have succeeded. The application of the positive pole of the galvanic current to the back of the neck and the negative pole to the nostrils to produce stimulation has been the usual method employed by Dr. Shurley, Dr. Delavan,[‡] Dr. Hartman, and others. The exact technique can be found in our *Transactions*. Even the faradaic current has been used and recommended; also the use of copper electrodes on the principle of electrolysis.

Another method of treatment is that recommended by Gottstein, by which the nasal mucous membrane is stimulated or irritated by the introduction of absorbent cotton into the nostrils, or some form of medicated wool, as recommended by Woakes.[#]

Among the various drugs which have been employed in this way are iodoform, iodol, aristol, salicylic acid, camphor, iodine, perchloride of iron, tannin, alum, rhatany, and opium. Medicated bougies, manufactured with a basis of gelatin and glycerin and medicated with the drugs just mentioned, have been used a good deal in atrophic rhinitis, and this method by which drugs can be kept in contact with the mucous membrane for a long time seems to be a reasonable one. The inhalation of stimulating volatile substances obtained from the essential oils and from cubebs, tar, eucalyptus, and thymol has also been largely employed; and we find in the shops a number of varieties of so-called auto-insufflators, by means of which the patient is enabled to blow into his own nostrils the fumes of carbolic acid, menthol, oil of pine, etc.

A somewhat different plan of treatment, but intended to produce proper stimulation and secretion, is called "massage" of the mucous membrane. Laher,[‖] of Vienna, says that this method of treatment has given most satisfactory results. The method is employed by wrapping cotton around a probang introduced against the atrophic mucous surface and held in position by the left hand, while regular motion is made by vibrating the left arm with the right hand. The writer states that after a few days normal secretion is established and the crusts become thinner and fewer in number. He believes that this method of treatment will recommend itself very highly to anybody using it.

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[*] Koch. *Mittheil. d. kaiserlich. Gesundheits.*, Bd. 1881.

[†] Thost. Schmidt's *Jahrbücher*, 1887.

[‡] Cardone. *Archivii italiani di laringologia*, 1886.

[*] Belfanti. *Associazione medica lombardia*, 1896.

[†] Shurley. On Atrophic Pharyngitis. *Transactions of the American Laryngological Association*, 1880, p. 20.

[‡] Delavan. Treatment of Atrophic Rhinitis by the Galvanic Current. *Transactions of the American Laryngological Association*, 1887, p. 145.

[#] Woakes. *Lancet*, 1880.

[‖] Laher. *Die Heilerfolge der inneren Schleimhaut-Massage bei den chronischen Erkrankungen der Nase.*

Demme * has found that massage performed after the manner described is made still more efficacious by using a twenty-per-cent. solution of pyoctanin in lanolin. He has succeeded, he says, in every case. Garnault † and others have used massage by means of electrical vibrations.

It seems to me that the use of destructive agents in the treatment of this disease deserves mention only to be censured. It is possible that an obstinate ulceration will require to be cauterized, but it seems to me a very unsafe procedure to recommend the galvano-cautery and chromic acid where their use can be indicated only in rare instances and then should be employed in the most judicious way. If the middle turbinated body needs to be reduced in size or a deflected sæptum is too prominent, as may be the case in atrophic rhinitis, cutting instruments will accomplish the result desired in a much more reasonable way. We can not afford to still further devitalize an atrophic sæptum with a heated electrode.

I find that many articles have been written on atrophic rhinitis where nothing more is offered in the way of treatment than the spraying of solutions of borax in glycerin, ammonium chloride in glycerin, solutions of chlorate of potassium and of phosphate of sodium and phosphate of ammonium, snuffs of animal or wood charcoal, compounds of honey and terebene, and ointments of creosote. Mather thinks it important to combine opium with his saline douches, and, if irritation and headache are produced by the nasal wash, recommends the smoking of a cubeb cigarette.

Struebing ‡ affirms that he has used every medication that has ever been recommended, and he has arrived at the conclusion that the nose should be cleaned by instruments because douching is harmful to the ears, and that the only successful plan of treatment is the use of bougies medicated with creolin, or, better still, metacresolaristol in one-per-cent. aqueous solution.

Wendell Phillips recommends an antiseptic solution called baptoline, and also one of acetotartrate of aluminum in water, half a drachm to the ounce.

Several drugs have been employed which deserve rather more attention. One of these is resorcin.

Masini,# as far back as 1882, was using one half of one per cent. of resorcin combined with vaseline, applied with the brush. He says the treatment is an ideal one. Other practitioners have used it in solution, and I know that it has been employed quite generally in New York, though I do not hear that the results obtained by its use have fulfilled expectations.

The use of hydrogen peroxide seemed for a time to promise great amelioration in this disease, and as a germicide and disinfectant its ability is unquestioned. It is, however, a rather troublesome medication to employ, and in my hands, while it produces cleanliness, is not a useful stimulant, but leaves the mucous membrane quite as dry as ever. In anything like strong solution I have found it quite irritating and apt to produce a subacute nasopharyngeal catarrh.

Professor Cozsolino, writing in 1887, says that after cleansing the nostrils, either absolute or diluted ethyl alcohol (C_2H_5OH) should be applied on small sponges or on pieces of absorbent cotton. He considers this application as one of the best antiseptics and fulfilling in a remarkable degree the properties of stimulation to the mucous surface of the nose. I used ozone for a time and with some benefit, but the apparatus is complicated, and such remedies are apt to fall into disuse.

We can safely say that nearly every expedient for the cure of this disease has been resorted to when we read that Dr. Hayes Agnew,* after exhausting every known remedy, finally conquered this disease by using douches of sage tea, and Dr. Reebus † extols the virtue of milk douches. He advises irrigation lasting for three quarters of an hour, and says that from twenty-five to fifty pints of milk should be passed through the nostrils.

In my opinion one of the most valuable agents was obtained when the various oily preparations came into use. You are all perfectly familiar with the various formulæ, some better than others, but many exceedingly good ones. As protectives, they are certainly sedative in their effect, and só allay irritation; as lubricants, they prevent the formation and retention of scabby crusts; as vehicles for stimulating drugs, they hold them in position for a much longer time than when watery solutions are employed. Many drugs have been used, in oily solution, in the treatment of atrophic rhinitis where disinfection as well as stimulation was desired, such as iodol, aristol, iodoform, etc.

Time forbids the mention of other methods of treatment or of a larger variety of drugs.

The results which we wish to obtain in the treatment of this disease are perfectly familiar to all: cleansing of the nasal passages; healing of ulcerations; the promotion of adequate nasal respiration and proper drainage, and the restoration, so far as possible, of the nasal lining to its function of a moisture-producing mucous surface.

It seems unnecessary to recommend any form of nasal irrigation to this body of men. I think it is wise, in

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* Demme. *Deutsche medizinische Wochenschrift*, 1891, No. 46.

† Garnault. *La Massage vibratoire et électrique dans les maladies du nez*, Paris, 1891.

‡ Struebing. *Centralblatt für Bakteriologie*, vol. xiii, 1893.

# Masini. *Archivii italiani di laringologia*, 1882, p. 74.

* Hayes Agnew. *Therapeutic Gazette*, 1885.

† Reebus. *Jahresbericht der Klinik für Laryngoscopie*, Wien, 1880.

teaching beginners, to recommend the smallest quantity of fluid which accomplishes the result, and it is hardly safe to advocate nasal douching without caution. The post-nasal syringe, when employed by rough-handed practitioners, is not a harmless instrument. I have found that patients succeed in removing dried incrustations rather more easily when they first spray plain oil into the nostrils. I think there are not many cases in which the nasal-douche cup does not furnish sufficient fluid if the saline solution—and I like Seiler's as well as any—is allowed to remain in the nostrils a few moments in order to separate the dry secretions from their attachments. This is a wiser procedure than using greater force with the fountain syringe, or blowing the nostrils with great intensity. When the nostrils are cleaned, if the middle turbinated body offers much obstruction or is wedged against the sæptum, it is desirable to make a channel between the two, and this can be done by removing the soft structures and perhaps a small part of the bony tissue with scissors. The snare is hardly a safe instrument, as it will sometimes remove the entire middle turbinated body; and with the crushing forceps more tissue is frequently taken away than is expedient. It is most important of all to remove the gray granular surface of the mucous membrane, which frequently presents small ulcerative points where the scabs have been attached. I like friction with some stimulating disinfectant much better than applications of nitrate of silver or of any other drug I have used. Perhaps the advocates of "massage" would say that this treatment should be placed under that head. I have succeeded in a good many instances in a form of treatment which I advocated in a paper some two years ago. I found that by the use of weak solutions of bichloride, or of borolyptol, or of boroformalin, applied by rubbing the mucous surface with a hard cotton pledget for perhaps half a minute at a time, I obtained, after a few applications, not only an even surface but a slippery one, whereas solutions of nitrate of silver nearly always leave the mucous membrane granular enough to retain the secretions. I would term it "polishing the mucous lining of the nose." This frictional method for the first time or two produces slight bleeding, but after that the mucous membrane becomes hard and white. I have employed the same method over the inferior body and far back over the middle turbinated. I hope this form of treatment may commend itself to you in spite of its simplicity. After the washing at home and the stimulating friction at the office, the next most important procedure is suitable and constant lubrication with oils. I do not believe that any advantage is attained by incorporating the many drugs which have been mentioned in the oily solutions. Protection and lubrication are the points to be obtained. I think the matter of stimulation is a very uncertain factor, and if great stimulation is produced by pungent drugs, greater dryness results.

In those cases only where there is a tendency to subacute inflammatory attacks with discharge of watery secretion should powders be employed. We see this condition in children where a purulent rhinitis is rapidly manifesting an atrophic state. I have found in these cases that after proper washing—and if there is much irritation they should not be washed at all—an appropriate powder will control the abundant discharge and at the same time remove congestion. I like better than anything else a combination of seventy-five per cent. compound stearate of zinc with boric acid and twenty-five-per-cent. compound stearate of zinc with alum. This powder should not be used after the discharge has been stopped and congestion controlled, as it is too drying. In the markedly congestive forms of atrophic rhinitis, seen in immoderate cigarette smokers and drinkers, this powder is a valuable one. It goes without saying that we should not promise any benefit from treatment unless excessive smoking and drinking are given up.

I do not consider the prognosis in these cases nearly as discouraging as I did formerly, because I have seen so many patients who, although washing and oiling the nasal chambers once or twice a day, expressed themselves as perfectly comfortable; and the patient's comfort is of more importance than a normal appearing mucous membrane. A young woman of nineteen or twenty expressed her great satisfaction but a short time ago at the treatment she had received and said she was cured. She had persisted in washing and oiling, and did not suffer from foul odor, or from the retention of secretions, or the feeling of dryness. I could not see that the mucous membrane was anything but dry, but was quite willing to agree with her in her belief that she was cured. I can not believe that better results can be secured by the tedious application of the electrical currents or the introduction of medicated tampons or bougies. These all require much time, and we are compelled to relinquish them sooner or later. We can not get patients to persist in the use of remedies which are difficult of application. Nor do I believe that we have any drug which has anything like a specific stimulating effect in atrophic rhinitis, unless it be that of iodide of potassium, where the destruction of tissue is due to syphilis. In the use of solutions, both oily and watery, we should err on the side of making them too weak rather than too strong. Any application which produces irritation enough to cause an apparent coryza is followed by harmful reaction. In looking over formulæ recommended in the treatment of this disease I have been impressed with the fact that many of them are far too strong.

I must repeat that too much attention can not be paid to the improvement of the general health. Let us get our patients out of factories and workshops, if possible, where they can get an abundance of fresh air and healthful exercise. It was Zeim, I believe, who ordered his patients to the seashore or to the woods for a certain time each day, in order that they might, as he expressed it, "thoroughly ventilate their nostrils." Probably the seashore is better for the majority of this class than the mountains are. Not all of our patients can play golf or ride bicycles, but some of them can, and it is within the power of nearly all of them to keep themselves in a healthful condition by proper bathing, by out-of-door exercise, and by reasonable habits of living.

ATROPHIC RHINITIS:

ITS NATURE AND SYMPTOMS.*

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THIS somewhat worn but ever-worthy topic is attracting renewed and earnest attention. It has recently been the subject of special discussion before the British Laryngological and Rhinological Association. Many papers on its varying phases are fresh from the press, and now the council, doubtless imbued with the general desire to clarify obscure features, has selected it for discussion by the American Laryngological Association. Naturally, latter-day interest has centred about the ætiology from a bacteriological standpoint, in the expectation that, given a specific cause, there might be found a specific remedy. No review of the "nature and symptoms" of atrophic rhinitis would be complete without at least a passing reference to these findings, yet my present obligation and purpose tend rather toward a study in aspects purely clinical, for it is evident that no theory of causation can obtain which does not harmonize with the life history of the disease. For instance, it is quite futile to attempt to explain the origin of ozæna, as seen in young children, on Fränkel's theory that it is a mere sequence to hypertrophic rhinitis, for there has not been time for such a cause to act; but when referring to another type of the disease—simple dry rhinitis of elderly persons—correspondence with its clinical course at once lends plausibility to his theory. In fact, none of the many hypotheses advanced has been found satisfactorily applicable to all cases of atrophic rhinitis, for the reason, perhaps, that different phases of the disease are of diverse or multiple causation. Two forms of the ozænal type, the fœtid and non-fœtid, have long been recognized, cases which are alike as regards the atrophy, crust formation, and the youthful period of development, differing only in that the majority are fœtid, while the exceptional minority are devoid of this symptom. Is it not probable, therefore, that the atrophic state may be due to one cause—a trophoneurosis, or possibly an infection by the cocco-bacillus of Löwenberg (1) or other micro-organism, and the fœtor to another cause, probably an addition or mixed microbic infection?

A better general classification, embracing all cases which present in common the condition of atrophy, one which is subject to subclassification if desired, is into two types—(1) simple dry rhinitis, and (2) ozæna, as suggested by Greville MacDonald, and with certain amendments herewith again submitted. It has reference to the comparative age at which the disease first manifests itself, as well as to the presence or absence of fœtor.

Both types are characterized by atrophy of the mucosa, submucosa, vascular plexus of the turbinated bodies, and the bone itself; also by degeneration of the mucous glands, by reason of which the altered secretion accumulates in the form of crusts.

(1) Simple dry rhinitis, while it sometimes affects young subjects ("ozæna non fœtida"), more commonly afflicts individuals approaching or past middle age, and it is usually associated with pharyngitis sicca. It is not accompanied by the characteristic fœtor of ozæna, although retained crusts may occasion a slight odor.

(2) Ozæna, on the other hand, commences in early life, even in early childhood or infancy, tends toward partial recovery after middle age, and is accompanied, as a rule, by persistent fœtor.

I have recently seen two typical cases occurring in children at four years of age, both said by the parents to have been "born with it"—one a boy, whose mother was likewise affected, and the other a girl whose father had the disease. In over one half (thirty-four) of Wingrave's (2) series of sixty cases it developed under fifteen years of age, and in most of the other half under thirty years (seven from thirty to fifty-three).*

While thus fairly distinct in most cases, and suggestive of the operation of varying or multiple causes in their production, instances are not wanting in which the two types seem to blend one into the other, or in which an intermediate state is apparent.

Both types are further characterized by an atrophic or rudimentary condition of the muco-lymphoid glands—the faucial, lingual, and postnasal tonsils, and the isolated glands of the posterior pharyngeal wall; but here again an occasional exception to the rule is encountered, especially in simple dry rhinitis, one or more tonsils remaining still enlarged. Also, in both types the local peripheral sensory nerves partake of the general atrophy, their functional inactivity varying in accordance with the gravity of the affection. The nostrils are less sensitive to irritating medicaments and the pharyngeal reflex is sluggish; hence they are favorable subjects for practice by novices with the laryngoscope. The velum, faucial pillars, posterior pharyngeal wall, and even the base of the tongue are thinner than usual, thus affording a more spacious pharynx through which to reflect light. The bones themselves are similarly affected, not alone the turbinated bones, which in advanced ozæna are reduced to rudiments, but also the nasal bones and their contiguous cartilages. The dorsum of the nose is broad, foreshortened, and sometimes slightly depressed, simulating then the "saddleback" nose of syphilis, only less pronounced; the tip is tilted upward, and the dilated nostrils present rather forward than downward, constituting a "facies" quite characteristic, but by no means always present.

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* Read before the American Laryngological Association at its nineteenth annual congress.

* The term ozæna is now by common consent among recent German and English authors restricted to this type of atrophic rhinitis, and in this sense alone it is employed in this article, not referring to any other disease accompanied by a foul odor.

The whole sæptum is affected, but especially its cartilaginous segment, in which perforation frequently ensues. This seems more common in simple dry rhinitis of later life than in ozæna, and should be ascribed in the main to the progressive emaciation of the cartilage rather than to erosion simply from the detachment of crusts. It is easy to pick through a cartilage already in a state of atrophy and without recuperative power, when perforation would not ensue from the same act on a normal structure.

These widespread nutritive changes, which involve not only the mucous and submucous tissues but also the muco-lymphoid, muscular, and osseous structures and the nerve supply as well, are suggestive, as voiced by Gottstein (3), Zarnike (4), Rethi, and others (5), of a primary centric trophoneurosis. This idea is further supported by the fact that in certain cases there is dryness of the roof of the mouth or of the whole mouth, there being an evident deficiency of both the mucous and salivary secretion. Moreover, it is a bilateral disease, the two sides, not only of the nose, but also of the pharynx and larynx when involved, ultimately becoming about equally affected. The exceptions to this are apparent rather than real, and are due to some special modifying condition, such as a markedly deviated sæptum, to the concave side of which atrophy, limited to the whole or part of one nostril, may be observed. It is indeed doubtful if this unilateral dryness and incrustation is the real atrophic disease, for correction of the sæptal deformity will result in a speedy cure, as exemplified in the following case:

Miss ——, aged twelve years, patient at St. Luke's Hospital, complained of dryness and incrustation of one nostril. The sæptum throughout nearly its whole extent was bulged toward the right side with a spur developed upon its convexity, causing occlusion of the right nostril. The left nostril was widely capacious. Crusts accumulated in the concavity of the sæptum and over the turbinated bodies, reaching even to the nasopharynx. They maintained constant irritation and excoriation of the nostril and irritability of the throat. An operation on the sæptum succeeded in placing it in the median line, with a complete cure of all the catarrhal symptoms.

Nevertheless, in certain cases, long-continued overspaciousness of a nostril results in persistent dryness, with mild atrophy of the pharynx and aural complications.

Cases thus of unilateral dryness lend a quasi-confirmation to the suggestion that congenital malformation of the bony framework of the nose is the underlying cause of atrophic rhinitis; by Hofman (6), that there is decreased length and increased height; and by Zaufal (7), that there is increased width of the nasal chambers, and in consequence poor ventilation with stagnation. However, simple dry rhinitis is known to attack nostrils previously of normal width, and ozæna may affect comparatively narrow chambers, so that faulty anatomical considerations can not be viewed as the sole cause.

Dryness and incrustation, oftentimes unilateral, are likewise observed in syphilitic cases, especially where gummatous softening of the sæptum has resulted in narrowing one nostril and widening the other, a condition which is not to be confounded with true atrophic rhinitis; but in consequence of the similarity of the two conditions it is felt that the latter might be a remote manifestation of the syphilitic dyscrasia in an hereditary form.

Many cases of ozæna can be coupled with a tuberculous family history, but not so with others, while the same can be said of alcoholism and gout as predisposing influences in simple dry rhinitis.

In both types, but especially in simple dry rhinitis, the atrophy varies much in degree and distribution. In the milder cases it may at first sight be difficult to discover, but on close inspection areas which present a dry, glazed appearance indicative of atrophic degeneration of the mucous glands or commencing gross shrinkage of the mucosa will be discerned. The posterior nares may be thus affected in conjunction with the nasopharynx, while the anterior parts appear fairly normal, or conversely. Many, but not all, of the cases of simple dry rhinitis of later life have previously been affected by hypertrophy, and have passed to the atrophic state either as a matter of consequence or coincidence. If seen during the transition period one may observe hypertrophy at one point and atrophy at another point of the same turbinated body, or inequality between the two nostrils. In fact, it seems unnecessary for the hypertrophic change to exhaust itself in one stage before the atrophy takes its turn, for both processes can exist and progress side by side and intermingled with each other in the same tissue.

Wyatt Wingrave (8) makes the point, with special reference, however, to the ozænal type, that there is a wide histological difference between true cavernous or erectile hypertrophy and the inflammatory thickening which precedes or courses along with atrophic rhinitis. But it is not unusual to find the middle turbinated bodies in a state of positive plain hypertrophy, or they may present the aspect of polypoid degeneration to the point of packing the upper nasal spaces, while the inferior conchæ are distinctly atrophied.

Hajek (9), however, contends that genuine atrophy is never accompanied by hypertrophy of the middle conchæ, and designates the condition in this class of cases as pseudo-atrophy.

The following case exemplifies the transition of the hypertrophic condition into the atrophic state not only of the nose but also of the pharynx and larynx:

> Mrs. R., aged about thirty-five years, was treated six years ago for hypertrophic laryngitis. The interarytænoid fold was markedly infiltrated, and the vocal cords and ventricular bands were thickened and relaxed. Aid was sought only on account of impairment of the voice, although she even then complained of a sense of dryness in the pharynx, although it showed follicular enlargements. The tonsils being enlarged were abscised, and the larynx curetted and swabbed with lactic acid. The nasal turbinated bodies were somewhat, but not greatly, enlarged, and were not subjected to treatment. The condition improved, and she passed from observation till last February, when she returned with symptoms of simple atrophic rhinitis and pharyngitis. The turbinated bodies and posterior pharyngeal wall are now distinctly atrophied, while the larynx is nearly normal and the voice good. A remnant only remains of the excrescence on the interarytænoid fold. Tuberculosis can be excluded. Syphilis was considered, but lacked any sort of confirmation till within the last two months, when two suspicious gummatous swellings have appeared on the sæptum. Should they prove to be true gummata, it will confirm my opinion that many cases of atrophic rhinitis, and of those which undergo the transition from the hypertrophic state, are manifestations of an attenuated form of syphilis, either hereditary or acquired.

In theory it is contended that the cirrhosis is a natural sequence to hyperplasia analogous to similar changes in the liver, and that the cellular proliferation which is incidental to hypertrophy serves by pressure to obstruct the vascular supply, thus leading to atrophy.

Dr. J. N. Mackenzie (10) is of the opinion that this transition theory is supported by satisfactory microscopic as well as clinical evidence.

Its vulnerable points are that it affords no explanation of the ozænal type of very early life; that simple dry rhinitis of later life is not invariably preceded by hypertrophy; and that hypertrophy does not always terminate in atrophy, facts which should lead us to seek farther for the dominant underlying causes of the disease.

Michael (11), and later Grünwald (12), have sought to establish the dependence of all cases of ozæna upon suppuration in one or more of the collateral sinuses, but his elaborate argument and mass of testimony only serve to convince one to the contrary.

Bosworth's (13) theory, that it is a sequence to suppurative rhinitis of childhood, is awaiting confirmation. It at least suggests a more thorough handling of all cases of suppurative rhinitis, since neglect of this is fraught with the danger of ultimate atrophy and ozæna.

Is it of a microbic nature?

Fränkel and Löwenberg (14) have isolated a specific cocco-bacillus (bacilli generally appearing as diplococci and distinguished by large size—1 to 1.65 μ) which is quite uniformly present in ozæna, and to which the fœtor at least is attributed; but inoculation experiments, the crucial tests, have so far failed to produce the disease.

Abel (15) has described apparently the same organism, under the name *Bacillus mucosus*, as invariably present in all stages and types of the disease. He declares it to be identical with the *Kapselcoccen* previously observed by others, but different from Friedländer's pneumo-bacillus, similarity to which has been noted by Hajek (16).

Wyatt Wingrave (17) has described hyaloid bodies, possibly of a parasitic nature.

Finally, the novelty is suggested by Belfanti and Della Vedova (18) that the diphtheria bacillus is the cause, and they report cures in one half their cases by a series of thirty antitoxine injections; but Professor Gardinigo (19) reports negative results.

Symptoms, with Special Reference to Type I, Simple Dry Rhinitis.—The milder forms of Type I are accompanied only by a sense of dryness in the nose or discomfort in the nasopharynx. A lady of fifty years, who had previously been affected with hypertrophic rhinitis for which the cautery had been perhaps too freely applied, was annoyed by subjective sensations of a web or veil across the nostril. Regarding the possible effect of cauterization in developing atrophic rhinitis, as the atrophy in this case was equally apparent on the sæptum, I regarded it as *post hoc* rather than *propter hoc*. Still, it would be wise to avoid the too free use of this remedy, especially on patients past middle age.

A gentleman, aged fifty-five years, exemplified a wide group; he complained solely of soreness and distress in the throat in consequence of the formation of crusts in the nasopharynx. The posterior third of the nasal chambers, in conjunction with the nasopharynx, presented atrophic changes. He gave a history of hypertrophic disease earlier in life, of which evidences still remained in the anterior nares and pharynx.

Incrustation over the cartilaginous sæptum tempts the patient to pick the nose, which leads to troublesome attacks of epistaxis. Even a rough use of the handkerchief can excite bleeding.

As stated, the characteristic fœtor of ozæna is not present, although a faint disagreeable odor may ensue from accumulated crusts.

The ears are commonly implicated, and impairment of hearing will at times be the first symptom for which relief is sought, the earlier nasal manifestations having been disregarded, and the same may be said for the symptom of impairment of the voice from implication of the larynx.

On examination of the nose inspissated secretion will be seen adhering, especially to the middle turbinated bodies and sæptum, or the surface will have a dry, glazed appearance in whole or part.

The symptoms, both subjective and objective, of advanced cases of simple dry rhinitis are much the same as those of the ozænal type minus the fœtor, and may therefore be considered in conjunction therewith.

Symptoms, with Special Reference to Type II, Ozæna.

—Crust formation and fœtor are the most prominent symptoms of ozæna, although other secondary manifestations are numerous.

The crusts may accumulate in thin scales or in large masses of horny consistence, which may even occlude the nostrils at times, being firmly adherent and impacted in the sinuosities of the nares, until, by decomposition and softening of the layers adjoining the mucosa, they are finally cast loose and expelled in large pieces by blowing, often leaving abraded but not ulcerating surfaces behind.

The fœtor varies in intensity in different cases, but in its severe form it is so horribly nauseating and penetrating as to contaminate the atmosphere of an entire room in a few minutes, and to necessitate comparative isolation of the afflicted person. It interferes with his social and business usefulness, and actually restricts his earning capacity. The odor is mostly due to decomposition of the incrusting secretion *in situ*, but there is reason to believe that this decomposition extends somewhat to the secretion, which is still in process of elaboration in the structure of the glands themselves, although this is difficult of absolute demonstration, for, however, thoroughly one may cleanse the parts, fœtor persisting might still be caused by small invisible particles of crusts in the accessory cavities, ethmoid cells, or sphenoid sinus.

In advanced cases, commonly, the sense of hearing is impaired, the sense of smell obtunded, the eyes occasionally inflamed, and the physiognomy lacking in acuteness of expression. The disease is prone to extend, following the air-passages downward even to the bronchioles.

On rhinoscopic examination, both anteriorly and posteriorly, one is impressed by the spaciousness of the nasal cavities and the presence of scales or crusts. Even when the conchæ are yet quite large there will be an abnormal width of space between them and the sæptum unless, as occasionally happens, the middle turbinated bodies are the seat of hyperplasia. In advanced cases the turbinated bodies appear merely as rudiments, and one seems to look into a large cavern through which can be seen the dry and glazed posterior pharyngeal wall and the crater-like Eustachian orifice. The faucial and post-nasal tonsils and lingual adenoid tissue will have disappeared or appear much atrophied. After thorough cleansing the mucous membrane looks smooth and thin, although somewhat congested and abraded in spots from the irritation of long-retained incrustation.

In conclusion, it would appear that the theory of mere transition from hypertrophic rhinitis is inadequate to explain all the clinical aspects of atrophic rhinitis, although it affords a rational explanation of certain cases of simple dry rhinitis of later life.

For the ozænal type the choice, in the main, would lie between the trophoneurosis and microbic theories, with the probabilities in favor of the latter, and bacteriologic methods should certainly be exhausted in an effort either to prove or disprove its microbic origin.

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SEPTICÆMIA IN THE PUERPERIUM.*

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There is probably no other branch of medical science which has furnished us with such a wealth of literature, within the past decade, as that of obstetrics, of which my subject to-night forms the most important part.

If we glance for a moment over the obstetric fields of the past, we see them densely studded with tombstones and monuments, marking the graves of those whose lives have been sacrificed in the lying-in chamber. I use the word "sacrificed" purposely, and to my mind deservedly, here, as I feel that we can not be too strong in our condemnation and denunciation of the recklessness with which obstetric practice has been and still is conducted by a large number of physicians, notwithstanding the immense strides made in scientific investigation in this department.

But it is gratifying to know that this cloud of obstetric lethargy is, by the irresistible influences of bacteriological breezes, being dispelled, exposing to view, as the noonday sun, that brilliant spark which was kindled by Ignatius P. Semmelweise, the young Hungarian, over half a century ago, as the result of his observations while in charge of the lying-in department of the Vienna General Hospital. The cases there were largely attended to by students who were engaged in anatomical and pathological work, the mortality reaching the enormous figure of ten per cent.

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Astounded at such resulting fatality, the brilliant-minded man immediately set to work to ascertain the probable cause, when what at first seemed obscure was soon rendered transparent by the death of one of his assistants as the consequence of a wound or cut which he received in the dissecting room, followed by symptoms identical with those of the fatal cases in the lying-in wards.

Hitherto there had been no precautions observed by the students before making examinations, which were frequent, save the washing of the hands with soap and water. From this time forth Semmelweise insisted on the thorough cleansing of the hands in soap and water, and then the holding of them for some time in chlorine water, or a solution of chlorinated lime, and, as a further precaution, restricted the number of examinations, with the result, in eighteen months, of reducing the mortality to 1.5 per cent. (1).

Yet, notwithstanding this indisputable evidence of the cause of infection and the value of antiseptics or antiseptic precautions in these cases, his doctrines were not accepted; he was opposed, ridiculed, and laughed at by his colleagues, until finally the overworked brain succumbed, in the midst of his enthusiasm, to the unpardonable strain of rejection and persecution, and, happily, the grim monster came to the rescue and conveyed him over to the great majority, where it is to be hoped he found brighter and more congenial intellects than he had among his colleagues at Vienna.

Had he had a Joseph Lister for a colleague, the keynote which he so ably struck, instead of falling flat, would have rapidly developed into a song of glad tidings throughout the civilized world. As it was, he deservedly won for his memory the distinction of being called "the father of antiseptic midwifery," if not "father of antiseptics"; for it seems to me that he was, no doubt, father of the thought which subsequently developed in the fertile brain of Lord Lister.

And now that so high an honor has been conferred upon Sir Joseph Lister, father of antiseptic surgery, or rather, foster father, as I prefer to put it—for the observations and suggestions made by Semmelweise antedated the introduction of antiseptics into surgery by Lister some nineteen years, and there is no line of distinction: antiseptic midwifery means antiseptic surgery—surely the memory of Semmelweise should share in the honor, and as a slight acknowledgment of what he has done for midwifery alone it seems to me that it would be an act becoming all obstetricians to endeavor to have a handsome bust of Semmelweise placed at the entrance of every lying-in hospital in the civilized world.

I have chosen the term "septicæmia in the puerperium," as it seemed to me to be less misleading than "puerperal fever" or "puerperal septicæmia," for, if we have a general invasion of the tissues and blood stream by micrococci, and an absorption of their poisonous products, we have as a result septicæmia. It matters not whether it follows the traumatism of labor, a surgical operation, or any other traumatic condition, we have the same ætiological factors in every case, and the condition is purely and simply one of wound infection. But, for obvious reasons, the puerperium is the most undesirable time and the most unfavorable circumstance under which septicæmia could occur. I shall dwell principally upon the ætiology and treatment, but will refer briefly to the conditions other than septic that may give rise to elevation of temperature in the puerperium; though I think it wiser and safer for the attendant, when he finds elevation of temperature, to take it for granted that it is of septic origin and act accordingly by thoroughly exploring the parturient canal, and, if not aseptic, to make it so.

Conditions other than Septic.—These are largely of a reflex character, owing to the supersensitive condition of the parturient woman's nervous system. For instance, the sudden announcement of sad news, a distended breast, acute constipation, etc., which at other times would give rise to little or no trouble, would cause considerable elevation of temperature in the parturient woman. This, of course, is of a transitory character.

Then we have concurrent diseases. I am willing to grant the possibility of a woman in the puerperium having typhoid fever, pneumonia, malaria, pleurisy, acute tuberculosis, etc., yet I must say I am extremely skeptical about them, and I consider them very dangerous cloaks to be left at the disposal of the careless obstetrician. No matter how typical these conditions may seem to be, they will not contraindicate the rendering of the parturient canal thoroughly aseptic.

A very valuable rule, which Dr. Ord endeavored to impress upon us while in St. Thomas's Hospital, was never to take anything for granted, no matter how typical the conditions may seem to be; not to consider our case diagnosticated until we had satisfied ourselves, as nearly as possible, of the condition of every organ in the body. By not turning this to practical account at all times, I have, on more than one occasion, felt mortified to find that I had a septic case complicated, or an obscure case of septicæmia, instead of one of the aforesaid conditions.

Ætiology.—1. Predisposing. In the changed condition of the blood, which is increased in quantity but diminished in quality, we have plethora, hyperinosis, leucocythæmia, etc., all of which predispose to inflammation. The dilatation of the blood and the lymph vessels of the pelvis, by predisposing or favoring the formation of thrombi, becomes a fertile soil for pathogenic organisms to develop in.

Then we have the supersensitive condition of the nervous system; the highly emotional state of the parturient; the increased susceptibility to worry and excitement, which all tend to lower the vitality and reduce the powers of resistance. After labor the patient is exhausted, and has lost more or less blood. There are probably slow and irregular contractions of the uterus, which, instead of closing the uterine vessels by agglutination, permit the forming of a clot that may become a fruitful soil for the pathogenic organisms. Then there is the general traumatism, produced by labor, through the whole parturient canal, more or less. A small piece of membrane, a cotyledon of the placenta, which soon swarm with saprophytes, may be left behind; a clot retained *in utero*, or even the normal lochial discharge itself, is a very good medium for the cultivation of pathogenic organisms (2).

Exciting Cause.—This is due to the introduction into the blood and tissues of pathogenic organisms and their poisonous products—septic infection; or of the poisonous products alone—septic intoxication; this latter being, in my opinion, what we have to deal with in the early stage, at least, of most of these puerperal cases.

We will briefly refer to the organisms most concerned in its production.

Streptococcus Pyogenes.—This is found in all fatal cases of puerperal septicæmia and is its usual cause. When one considers the ubiquitous character of this most dreaded of all organisms, one naturally wonders that the septic cases are not more numerous than they are. Sternberg (3) explains this as probably due to the attenuation of the pathogenic powers of the streptococcus when it leads a saprophytic existence. I fancy this is due, in part at least, to the germicidal or attenuating influences of the normal vaginal secretions. Habitat: Netter, in eighteen cases of otitis media, found the *Streptococcus pyogenes* thirteen times and the *Staphylococcus pyogenes aureus* five times. The former class of these germs is also found in the nasal and buccal discharges, erysipelas, diphtheria, scarlet fever, and nearly all septic cases; in the air, hence in the healthy nasal mucous membrane; and also on the skin, though in this locality, I think, they are very much attenuated, except on the hands and about the finger nails, where they may be very virulent; yet, even in this attenuated condition, if they are placed in a suitable medium, such as we usually have in the parturient canal, they may become very virulent. Microscopically, they can not be distinguished from the streptococci of erysipelas. They possess great vitality in living tissues. There is one clinical point of difference between them and the staphylococcus—that is, that the latter is associated with acute circumscribed abscesses, while the former tends to produce a spreading suppurative process or diffuse phlegmon or abscess. Thermal death point, 80° C. (176° F.); in one-in-forty carbolic acid, in one minute.

Staphylococcus Pyogenes Aureus (4).—This has been styled the ubiquitous pus germ, as it is present in about eighty per cent. of all suppurating cases also on the skin, mucous membranes, clothing, and hands, particularly beneath and around the finger nails. Thermal death point, 80° C. (176° F.); in one-in-forty carbolic acid, in one minute.

Colon Bacillus.—This is found chiefly in the fæcal discharges, on the perinæum, and about the anus. In certain morbid conditions it penetrates the wall of the colon, and even the walls of the uterus. Haven (5) reported a case of puerperal sepsis in which the chill occurred twelve hours after the delivery. He believed the woman was in a septic condition at the time of labor, on account of the rapid development of the disease. In this case the colon bacillus was found to be the cause. Von Franque (6) reported a case in 1893, of moderate severity, in which he found a pure culture of the colon bacillus in the uterus, unaccompanied by any other organisms. These are the only cases I can find reported as due to the colon bacillus. When we consider the proximity of the parts inhabited by this organism to the parturient canal, it is rather surprising that it is not more frequently found there than it is.

Gonorrhœa.—Mr. Lawson Tait and his disciples have probably been the first and most enthusiastic in drawing the attention of the profession to the great danger of gonorrhœa to the parturient woman, and in this they have attached all the blame to the gonococcus. Up to this date I have only been able to find twelve cases reported as due to the gonococcus. Nine of these were reported by Kronig (7), in connection with his clinic at Leipsic, and are, no doubt, thoroughly reliable, as the work was done under the supervision of Doberlin, who is an expert bacteriologist as well as obstetrician. Kronig stated that these cases were all very mild and recovered without treatment. All the cases reported as probably due to the gonococcus were very mild indeed, and recovered without treatment.

Now, for the disastrous results spoken of by Tait, Ross, and others, we must look to some other source than the gonococcus itself. Sternberg, Crookshank, and others have shown that in the late stage of gonorrhœa the staphylococcus is nearly always present, and is probably the cause of the suppuration in the inguinal glands, prostate, in the joints, and endocardium. Some authorities claim to have found the gonococcus in these secondary conditions, but Sternberg thinks they are not authenticated cases, and considers the *Staphylococcus pyogenes* as the most likely cause. The streptococcus is also not infrequently present in the late gonorrhœal discharges. It seems to me, then, that we are justified in concluding that the great danger lies in the gonorrhœal pus, and not in the gonococcus itself.

Bacteriological investigators give the same results in all sources of infection in the puerperium.

Why do we dread diphtheria? Principally because almost invariably in this disease we have the streptococcus, or staphylococcus, or both. These organisms are also the danger of contamination with suppurating wounds. Also in the muco-purulent discharges from the nose, as in the celebrated case of Dr. Rutter, of Philadelphia, who had forty-three cases of septicæmia, all the result of a mucopurulent coryza. These organisms have been shown to be almost constantly present in the discharges from the nose.

Erysipelas.—Here the streptococcus, morphologically and pathologically, is identical with the *Streptococcus pyogenes* of septicæmia.

Scarlet Fever.—The erythematous condition of the skin, or the septic rash, which is frequently present in severe cases of septicæmia, explains in a great measure the extreme susceptibility the parturient woman was supposed to have to scarlet fever. If we glance for a moment at the bacteriology of this disease we will find the source of danger satisfactorily explained.

Micro-organisms in cases of scarlet fever have been observed by several of the most distinguished bacteriologists. Bacilli, cocci, and streptococci have all been found in the organs of the throat, yet Crookshank (8) is inclined to think that these may not necessarily be the organisms of scarlet fever, but diphtheritic or septic associates.

Babes has always found the streptococcus in inflammatory products secondary to scarlet fever.

Heubner and Bahrdt, in a fatal case of scarlet fever, complicated with suppuration of the finger and knee joints and pericarditis, found a streptococcus identical with the *Streptococcus pyogenes.*

Fränkel and Freudenberg obtained cultures of cocci from the submaxillary lymph glands, spleen, liver, and kidneys. These could not be distinguished from the *Streptococcus pyogenes* found in pus, nor from the identical streptococcus frequently cultivated by Fränkel in large numbers from puerperal infection. In two of the cases, as the streptococcus was the only organism found, they concluded that the presence of the streptococcus was due to the secondary infection which was laid open by the lesion in the throat, and that the true scarlatinal contagium was probably present on the skin. Ruskin, Holmes, and Crookshank hold this view also, and maintain that the nature of the contagium of scarlet fever is unknown. Klein regards this streptococcus as the actual cause of scarlet fever.

Hence the whole ætiology simmers down to streptomycosis, or staphylo-mycosis, with probably an occasional gonococcus or colon bacillus. This latter, some authorities think, begins in the colon, the colon bacillus subsequently penetrating the walls of the colon and gaining access to the uterus.

It is interesting to mark the developments, but lamentable that they have not been in more rapid succession. Oliver Wendell Holmes, in his masterly paper, drew attention to the infectious character of puerperal fever. Semmelweise, in 1846, observed that decomposing organic animal matter produced septicæmia. The attention of the profession has from time to time been drawn to the danger of erysipelas, scarlet fever, diphtheria, etc., to the parturient woman. But it was not until 1886 that Pasteur discovered the streptococcus in puerperal septicæmia. To the bacteriologists are we indebted largely for having caused the obstetric pendulum to swing from the domain of medicine to the domain of surgery, where it justly belongs.

But, for the immense reduction in the mortality and morbidity of these cases are we indebted to the Right Hon. Lord Lister, who above all, in antiseptics at least, stands proudly eminent. For, as I have already said, antiseptic surgery means antiseptic midwifery, and the neglect of any of its details is as unpardonable in the one as the other.

Semmelweise apparently shot over the heads of his colleagues some thirty or forty years when he made the statement that the decomposing organic animal matter which, when introduced, produced childbed fever was in the vast majority of cases brought to the patient from without. At first sight one would think that this is, practically, the view held by bacteriologists to-day, there being only a change in the phraseology—that is, for "decomposing animal matter" they substitute pyogenic organisms—but this is not strictly correct, for we know, as a matter of fact, that cadaveric poison may contain pyogenic organisms, or it may contain simply saprophytes, this depending largely on the cause of death and the time that has since elapsed, so that the physician may go from one autopsy to a labor case with comparative safety, while from another he might convey a most virulent poison. Yet it is questionable if the introduction of decomposing organic animal matter, whether it contained pyogenic organisms or not, might not produce septicæmia in the parturient woman by re-enforcing attenuated pyogenic organisms which may already be present in the parturient canal. As we know that the mere presence of pyogenic organisms in a wound is not sufficient to produce septicæmia, as they have frequently been found in wounds in which there has been found no suppuration, it follows that something more is necessary; yet what this something is we do not quite know, but we do know that decomposing animal matter, decomposing clot, a piece of membrane or placenta, all form a favorable medium for bacteria to develop in. The fact that some other agent than the mere presence of pathogenic organisms is necessary for the production of infection has been shown by Bossowski (9), and more recently by Welch (10) and Howard, who introduced virulent cultures of the staphylococcus into the fresh blood clot of wounds antiseptically treated without producing suppuration. The same has been noticed in the puerperal uterus.

Self-infection.—Steffeck (11) has examined the vaginal discharges or secretions in twenty-nine women—pregnant—who had not been subjected to digital examination, and found the *Staphylococcus pyogenes albus* in nine, *Staphylococcus pyogenes aureus* in three, and *Streptococcus pyogenes* in one. Walthard reports the result of the examination of the secretion from the vaginæ of one hundred pregnant women who had not been subjected to digital examination; streptococci were found twenty-seven times in cultures. These were not virulent, but they became virulent when placed in a suitable medium; and with a reduced power of resistance, such as we have in the puerperium, they are enabled to invade the tissues.

Kronig, in his report of nearly five hundred cases in 1894, found the vaginal secretions to be acid, the intensity of the reaction varying in the different cases. In no cases did he find the *Streptococcus pyogenes* or the pyogenic staphylococcus. His conclusions were that the vaginal secretions of untouched pregnant women contained nothing septic, and were therefore aseptic.

Kronig and Menge have made experiments proving that bacteria, including the *Streptococcus pyogenes* and the pyogenic staphylococcus, could be introduced, even in large quantities, into the vagina of a pregnant or non-pregnant woman, and would disappear in a short time, say from six to thirty-six hours. In only one case did the vagina become affected, and that was the result of an accidental wound of the vagina. In all the other cases they began to disappear almost immediately after their introduction.

What the bactericidal properties of the vagina were due to they could not say; they were supposed to be due to the acid secretion; but this would not apply to the cervix uteri, from which they disappeared just as rapidly, as this, of course, is alkaline.

Doberlin, in the bacteriological examination of one hundred and ninety-five pregnant women, in 55.3 found acid normal vaginal secretions. According to his definition, the only bacteria were the acid-producing bacilli. In 44.6 per cent. he found what he called a pathological secretion, feebly acid, neutral, or alkaline, containing various bacilli and cocci. In ten per cent. of the latter he found the *Streptococcus pyogenes*, which proved pathogenic in one half of the cases inoculated. Again, in his work on vaginal secretions, he explains the apparently different results of different observers. He describes the normal vaginal secretion as a whitish material, of the consistence of clotted milk, with a strongly acid reaction; microscopically, it contains a long bacillus, a few epithelial cells, and, occasionally, a few yeast cells. The pathological secretion, on the other hand, has a yellowish or a yellowish-green color; is of a creamy consistence; its reaction is weakly acid, neutral, or alkaline; it contains large quantities of micro-organisms—bacilli, as well as cocci—and considerable quantities of leucocytes and epithelial cells. His conclusions were that the normal vaginal secretion presents absolutely no possibility for self-infection, but rather appears to be germicidal in its action, as small quantities of pyogenic organisms, when introduced in a vagina with a normal secretion, were soon destroyed. His explanation of the divergent results of different investigators is, that those who obtained negative results happened to experiment with normal vaginal secretions, while the others met with both.

Dr. J. Whitridge Williams, of the Johns Hopkins University, substantiates the results of Doberlin in a report of the examination of fifteen women. This is also confirmed by Steffech, Winters, and others; the general conclusion being that auto-infection is possible, but very improbable.

Germicides (13).—Before going on to the treatment I should like to refer to the relative values of the different germicides. The statements made by the different bacteriologists have been so conflicting, and so many fallacies shown, that Crookshank says that there is no wider field for research than the determining of the real effect of disinfectants and antiseptics. Koch's investigations resulted in favor of the mercurial salts. Herron cultivated ordinary septic bacteria in albuminous filtrates, and concluded that the value of mercuric chloride was much overrated. It is precipitated by albumins, but, as Lister has shown, the precipitate of albuminate of mercury is dissolved when there is an excess of albumin present.

Geppert and Behring recognized later on that the methods employed for testing the efficacy of corrosive sublimate were unreliable. They found, for instance, that it could not be removed from silk threads by washing, and, consequently, the time for its action could not be definitely determined, and that in order to do this it was necessary to dip the threads in ammonium sulphide after treatment with the corrosive sublimate.

Crookshank confirms the results of Geppert and Behring, and has made a series of experiments to test the value respectively of carbolic acid and corrosive sublimate in antiseptic surgery. He discarded the method adopted heretofore, of washing the thread after it was taken from the mercurial solution in alcohol, as fallacious, on the ground that absolute alcohol itself would destroy the *Streptococcus pyogenes* and *erysipelatus*, and the *Staphylococcus pyogenes aureus*, acting for only one minute. Other methods were, consequently, resorted to by Crookshank, whose technique seems to have been extremely accurate, in which the results were entirely in favor of carbolic acid. The details of his technique were as follows:

First, cultures on the sloping surface of nutrient agar were made. The antiseptic was poured into the culture tube until the growths were covered, and when it had acted for a definite time, say one, five, or fifteen minutes, a solution was added which immediately stopped further action. In the case of bichloride, ammonium sulphide was used, which is quite inert as a germicide. The liquid contents of the tubes were then carefully poured off, and inoculation into a fresh tube was made from the cultures still adhering to the surface of the nutrient medium, with results that disproved the efficacy of bichloride. Another plan was adopted: cultures were made in broth, the fluid poured off, and bichloride solution added and well agitated. After the set time had expired, ammonium sulphide was added, and the tubes of fresh broth were inoculated with the mixture. The *Staphylococcus pyogenes aureus* and *Streptococcus pyogenes* were not destroyed, even when corrosive sublimate solution (1 in 1,000) was allowed to act for an hour. In the case of streptococcus of erysipelas the result was different—1 in 4,000 destroyed the cultures in one minute.

With carbolic acid the results were very striking. Cultures were exposed to a solution of 1 in 20, 1 in 30, 1 in 40, 1 in 50 for periods of one minute, five minutes, fifteen minutes, and the attempts to make subcultures failed in every case. The carbolic acid (1 in 40), acting for one minute, was sufficient to destroy all the pyogenic organisms.

(To be concluded.)

Therapeutical Notes.

Quinoleine in the Treatment of Whooping-cough.—G. Koch (cited in the *Indépendance médicale* for September 29th) recommends this formula:

℞ Quinoleine tartrate	1 part;
Syrup, Distilled water,	each ... 75 parts.

M. S.: A tablespoonful every three hours.

An Ointment for Palmar Psoriasis.—The *Centralblatt für die gesammte Therapie* for October credits this formula to the *Wiener medicinische Presse:*

℞ Calomel, Lanolin, Lard,	equal parts.

M. To be rubbed into the palms of the hands at bedtime and washed off in the morning.

An Application for Fissures of the Tongue.—The *Centralblatt für die gesammte Therapie* for October takes this formula from the *Monatshefte für praktische Dermatologie:*

℞ Carbolic acid	3 parts;
Tincture of iodine	10 "
Glycerin	30 "

M. For smearing the fissures.

Hot Water in the Treatment of Gonorrhœa.—Callori (*Bulletin médical; Journal de médecine de Paris,* October 3d), acting on Neisser's demonstration that a temperature of 113° F. destroyed the virulence and the reproductive power of the gonococcus, has treated gonorrhœa with injections of water of that temperature, and in most instances with success. He advises a preliminary injection of a weak solution of cocaine. A woman's urethra, he says, will bear a temperature a few degrees higher than a man's will tolerate.

Nullard's Diuretic.—The *Gazette hebdomadaire de médecine et de chirurgie* for October 14th gives the formula as follows:

℞ Infusion of juniper berries	200 parts;
Syrup of the five roots, Oxymel of squill,	each ... 15 "
Potassium nitrate, Potassium acetate,	each ... 2 "

M. S.: Seven ounces to be taken in the course of twenty-four hours.

Applications to Small Vegetations of the Vulva.—The *Journal de médecine de Paris* for October 17th attributes the following to Lutaud:

℞ Powdered savine, Burnt alum,	each ... 25 parts;
Corrosive sublimate	1 part.

M. S.: To be applied three or four times a day, after bathing the part and drying it with absorbent cotton.

A more active powder is the following:

℞ Powdered savine, Iodoform, Salicylic acid,	equal parts.

M.

Applications to Insect Bites.—Brocq and Jacquet (*Indépendance médicale,* October 20th) recommend the following for the bites of bugs, fleas, and gnats:

1. ℞ Camphorated oil of chamomile	100 parts;
Liquid storax	20 "
Essence of peppermint	5 "

M.

2. ℞ Olive oil	20 parts;
Storax ointment	25 "
Balsam of Peru	5 "

M.

3. ℞ Naphthol	5 to 10 parts;
Ether, enough to dissolve it;	
Menthol	¼ to 1 part;
Vaseline	100 parts.

M.

The Administration of Cod-liver Oil.—Bricemoret (cited in the *Journal des praticiens* for October 23d) recommends the following formula:

℞ Cod-liver oil	15 ounces;
Syrup of Tolu	7½ "
Tincture of Tolu	12 drops;
Essence of cloves	2 "

M. S.: A tablespoonful two or three times a day, the bottle being well shaken before the dose is poured out.

A Ferruginous Somatose.—There is a preparation which the Germans term *Eisensomatose,* described by Roos (*Therapeutische Monatshefte,* September, 1897; *Wiener medizinische Blätter,* October 28, 1897) as a brown powder readily soluble in water and containing about two per cent. of iron in organic composition. Roos has used it with excellent results in a number of cases of chlorosis, without changing the diet or the mode of life. From twenty-five to fifty grains may be given three times a day. The larger dose has a tendency to act as a purgative.

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THE TREATMENT OF CONTUSIONS OF THE ABDOMEN.

The treatment of severe contusions of the abdomen, especially by the kick of a horse, was made the subject of a very thorough discussion at the Eleventh French Congress of Surgery, held in October (*Presse médicale*, October 20th). Among the most notable contributions to the discussion was one by Michaux, who devoted his attention largely to pointing out the fallacy of such statistics as Mendy's, which seem to rest on cases reported by the army surgeons. He cited the following figures: two hundred and eighty-nine cases of contusion of the abdomen by the kick of a horse, of which two hundred and fifty-four were treated without laparotomy and resulted in a hundred and seventy-eight recoveries and seventy-six deaths, and thirty-five were treated by means of laparotomy, with ten recoveries and twenty-five deaths.

Such, he remarked, were the bare figures, but an examination of the histories of the cases modified them in the following manner: Of the twenty-five laparotomies that had been followed by a fatal result, nineteen had been done at a time when peritonitis was in full progress, and the patients had been the victims of "armed expectation," not of laparotomy; those laparotomies had been performed for peritonitis, not for abdominal contusions. The hundred and seventy-eight recoveries without operation included a hundred in cases concerning which no details were recorded and thirty-four contusions of the hypochondria, the flanks, and the lumbar, hypogastric, and inguino-crural regions, which detracted much from the value of the figures. Delorme had reported twenty cases of the kick of a horse in the abdomen, seventeen of which had ended in recovery without operation, and three in death after laparotomy, but these laparotomies had been done after the lapse of twenty-three, twenty-four, and thirty-seven hours. Chaput had reported seven cases, six of which had proved fatal by reason of the intestine being ruptured. Gross had treated six cases without operating, with four recoveries and two deaths. The speaker's own statistics related to twenty cases of contusion by various casualties, all very serious. He had operated in fourteen of them, and there had been twelve recoveries and two deaths. He attributed these deaths to the fact that the operation had been delayed. In the six cases in which he had abstained from operating there had been two deaths from rupture of the hilum of the spleen and septic peritonitis without intestinal lesions.

He stated anew his rules regarding laparotomy as follows: It should be done as soon as possible, as soon as the shock had passed off. It should be done as rapidly as possible. Blood should be removed by means of large aseptic sponges, and the intestine examined methodically in hot sterilized cloths. It was unnecessary to draw the organs out from the abdomen unless the remains of food or fæces were found. The abdomen should be left freely open at the close of the operation, and dangerous areas walled off with wads of iodoformed gauze. Finally, and most important of all, the fight for the patient's life should be kept up to the end; large injections of serum should be thrown into the veins, and abundant peritoneal irrigation with a saline solution and with potassium permanganate be employed.

PROTARGOL AND ITS USE IN THE TREATMENT OF GONORRHŒA.

Professor Neisser, of Breslau (*Dermatologisches Centralblatt*, 1897, i; *Therapeutische Wochenschrift*, October 24, 1897), describes protargol as a protein compound containing eight per cent. of silver, a fine yellowish powder soluble in hot or cold water with the aid of shaking. Its most characteristic property, he says, one not possessed to so great a degree by any other silver salt, is that of not being precipitated from a watery solution by a weak solution of sodium chloride, by dilute hydrochloric acid, or by caustic soda. Ammonium sulphide deepens the color of the solution, but does not occasion a precipitate. Concentrated hydrochloric acid gives rise to precipitation, not of silver chloride, however, but of protargol itself, which, on the addition of more water, dissolves again. This property, he thinks, makes it more capable than any of the other silver salts of penetrating into the tissues. Protargol, he says, is superior to argentamine from the fact that the employment of solutions of most efficient strength, of one quarter, one half, or one per cent., proves irritating only in exceptional instances and to a trifling degree, so that it may be used from the very outset, as soon as the gonococcus is discovered.

So far as experimental investigation of its antiseptic power goes, says Neisser, this has not yet been concluded, but clinically it has been shown to be equal to the best preparations known. The use of protargol, he continues, admits of a modification of treatment that seems to be exceedingly efficient, that of prolonging the action of the remedy on the mucous membrane without reducing the strength of the solution and without limiting the depth of its action for fear of any chemical decomposition taking place. It is undoubtedly better, he thinks, to give single injections lasting for half an hour than to employ several small ones. His practice is, first, to ascertain if gonococci are present, and, if they are, to begin with the injections at once. He gives them three times a day. Two of these injections last only five minutes each, but the third consumes half an hour. Very soon, he says, often after only a few days, the treatment may be restricted to this one prolonged injection daily. The extraordinary mildness of this treatment, he remarks, admits of its prolongation to three or four weeks' duration, and therein, he thinks, often lies the chief cause of its good effects. He thinks it best to begin with a quarter-per-cent. solution, and increase the strength very soon to one half and one per cent.

Neisser gives it as his decided impression that he never had such sure and prompt results in the treatment of gonorrhœa as since he began the use of protargol. In practice, he says, it has fulfilled perfectly the great expectations that theoretical considerations had raised, and he has no doubt that others who may try it will agree with him, even if some accident interferes with their success on the first trial.

MINOR PARAGRAPHS.

SOME FACTS ABOUT CHLOROSIS.

A WRITER in the *Centralblatt für innere Medicin* for September 25th, Dr. Ephraim, of Breslau, summarizes a striking article on chlorosis, by Dr. H. Huchard, published in the *Revue de thérapeutique* for March 15th. As regards the distinction between chlorosis and anæmia, Huchard says: "There are anæmias, but there is only one chlorosis. A person is chlorotic; a person becomes anæmic. A chlorotic subject may become anæmic; an anæmic subject does not become chlorotic. We may produce anæmia, but never chlorosis." The author holds it erroneous to look upon congenital stenosis of the arteries as the cause of chlorosis. For purposes of treatment, he divides chlorosis into three forms. The first form includes cases in which the symptoms are not severe; here a rational mode of living always suffices for a cure. Importance attaches to sufficient bodily rest; long walks, journeys, etc., should be avoided. Iron is superfluous in these cases, and it is injurious in that form of chlorosis that is ushered in by dyspeptic symptoms; in such cases the first thing to do is to cure the dyspepsia. The remaining cases are affected favorably by iron. The author prefers iron protochloride, iron protiodide, iron citrate, and reduced iron in small doses. As regards climate, he recommends an altitude of from eight hundred to a thousand yards. In general, the treatment of chlorosis should be with plenty of rest, plenty of air, and a little iron.

THYREOID MEDICATION IN PELVIC CONGESTION.

AT the Twelfth International Medical Congress (*Gynécologie*, October, 1897) M. Jouin, of Paris, announced that he had employed the thyreoid treatment in congestive states of the pelvic organs and for the cure of fibrous tumors of the uterus. He had found its effect particularly favorable in cases of hæmorrhage. In cases of purely functional hæmorrhage the results had been a complete and lasting cure, also in those of hæmorrhage at the menopause or dependent on flexions, versions, and the like. The growth of fibrous tumors was always checked by it, it often led to their retrogression, and when it was employed early it cured them.

COMPLETE OBLITERATION OF THE LEFT SUBCLAVIAN ARTERY IN THE COURSE OF ACUTE AORTITIS.

AT a meeting of the Paris Anatomical Society held on October 8th (*Gazette hebdomadaire de médecine et de chirurgie*, October 14th) M. Iselin reported the case of a man, fifty-four years old, who, at the time of making an exertion, had felt a violent pain at the root of the neck, and at the same time begun to suffer with intense dyspnœa. The pain disappeared in the course of a few hours, but the dyspnœa continued and increased to such a degree that the man could not work. It was inspiratory, and was not explained by the state of the kidneys, the heart, or the lungs. There was no pulsation of the arteries of the left arm, and there was dilatation of the aorta. The man died suddenly. Post mortem, the heart was found to be hypertrophied, the aorta was three fingerbreadths in diameter and brittle, and the left subclavian artery was completely obstructed by a clot, from its origin to that of the vertebral artery. There were the lesions of acute inflammation in the whole thoracic aorta.

LACTIC ACID IN THE TREATMENT OF ENDOMETRITIS

ILKEWITSCH, of Moscow (*Centralblatt für Gynäkologie*, October 30th), has satisfied himself experimentally of the truth of Professor Sneguireff's statement as to the efficiency of lactic acid as a destroyer of pathogenic micro-organisms in the utero-vaginal tract. A three-per-cent. solution, injected into the vagina, he finds, overcomes the odor that may be present in cases of leucorrhœa, changes the color of the discharge from green or yellow to white, and may be used without danger in ambulatory practice and in cases of salpingo-oophoritis. In certain cases, he thinks, the intra-uterine employment of a stronger solution may be substituted for the use of the curette.

THE MEDICO-LEGAL VALUE OF SIGNS OF SELF-ASSISTANCE IN PARTURITION.

MITTENZWEIG (*Vierteljahrschrift für gerichtliche Medicin*, xiii, 1; *Centralblatt für Gynäkologie*, September 25, 1897) reports two cases of self-assistance in labor. He arrives at Fritsch's conclusion—namely, that as a general thing the traces of self-assistance do not extend below the suprahyoid region. If this is substantiated, he says, the distinction between self-assistance and infanticide by strangulation will be much facilitated, for it is a matter of observation that the marks of strangulation are found below the larynx. That injuries of the mouth and pharynx are not in themselves indicative of self-assistance is shown, he remarks, by a case of infanticide known to him; according to the mother's confession, she had torn away the child's lower jaw after its birth. The diagnosis of self-assistance in cases of head-last labor may be particularly difficult, he adds, from the resemblance of the injuries to those of strangulation. All the data must be carefully weighed in each individual case.

CHAMPIGNON DU CHEVAL.

THIS, it seems, is the name that the French veterinarians apply to an affection of horses characterized by the formation of pediculated papillomatous tumors of the scrotum after castration. At a recent meeting of the French Association of Surgery (*Gazette hebdomadaire de médecine et de chirurgie,* October 21st) Poncet and Dor stated that a parasite closely resembling that of the botryomycosis of Bollinger had been found in connection with this disease, and that they had demonstrated a causative relationship between it and the pediculated papillomata frequently seen in the human subject, principally on the fingers and hands.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 16, 1897:

DISEASES.	Week ending Nov. 9.		Week ending Nov. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	28	12	13	3
Scarlet fever	154	8	127	7
Cerebro-spinal meningitis	0	0	0	0
Measles	205	12	203	12
Diphtheria	150	24	121	24
Croup	1	3	7	5
Tuberculosis	180	97	220	95

The New York Academy of Medicine.—At the anniversary meeting, held on Thursday evening, November 18th, Dr. A. Alexander Smith delivered a memorial of the late Dr. William T. Lusk. This was followed by the anniversary discourse, on Sanitary Science, the Medical Profession, and the Public, by Dr. Hermann M. Biggs.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, November 24th, Dr. Walter F. Chappell will read a paper on A New Tracheal Tube, and Dr. Wolff Freudenthal will read one on The Climatic Influence of our Southwestern States on Diseases of the Respiratory Tract.

At the next meeting of the Section in Obstetrics and Gynæcology, on Wednesday evening, November 24th, Dr. Thomas H. Manley will read a paper entitled Some Special Features in Hernia and Herniated Conditions in the Female.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Pathology, on Tuesday evening, the 16th inst., the following papers were to be read: Recent Researches in the Pathology of Trichophytosis, by Dr. William Thomas Corlett, of Cleveland; and Multiple Idiopathic Pigmented Sarcoma of the Skin, by Dr. Grover R. Wende.

The New York Otological Society.—The next regular meeting will be held on Tuesday, November 23d, at 8 P. M. Dr. F. M. Wilson will entertain the society at the Hotel Manhattan.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, and cholera were received in the office of the supervising surgeon general during the week ending November 13, 1897:

Yellow Fever—United States.

Flomaton, Ala.	To Nov. 3	65 cases.	
Greensboro, Ala.	Nov. 2	1 case,	1 death.
Mobile, Ala.	Nov. 6–12	29 cases,	6 deaths.
Montgomery, Ala	Nov. 6–10	6 "	1 death.
Selma, Ala.	Nov. 10	1 case.	
Whistler, Ala	Nov. 6–12	16 cases,	2 deaths.
Baton Rouge, La.	Nov. 11	1 case.	
New Orleans, La.	Nov. 6–12	84 cases,	36 deaths.
Biloxi, Miss.	Nov. 5–11	11 "	1 death.
Clinton, Miss.	Nov. 12	2 "	
Edwards, Miss.	Nov. 8 and 12	6 "	
Pascagoula, Miss.	Nov. 8 and 10	1 case.	
Scranton, Miss.	Nov. 8 and 10	4 cases,	1 death.
Memphis, Tenn.	Nov. 4–7	5 "	3 deaths.

Yellow Fever—Foreign.

Guantanamo, Cuba	Sept. 1–30		1 death.
Matanzas, Cuba	Oct. 20–Nov. 3		5 deaths.
Sagua la Grande, Cuba	Oct. 23–30	49 cases,	2 "
Buff Bay, Jamaica	Oct. 16–23	1 case,	1 death.
Kingston, Jamaica	July 23–Oct 23	56 cases,	25 deaths.
Manchester, Jamaica	July 23–Oct. 23	9 "	3 "
Port Antonio, Jamaica	July 23–Oct. 23	4 "	4 "
St. Elizabeth, Jamaica	July 23–Oct. 23	1 case,	1 death.
Leon, Nicaragua	Oct. 1		2 deaths.
Cape Haytien, Porto Rico	Nov. 6	Yellow fever reported.	

Small-pox—Foreign.

Prague, Bohemia	Oct. 16–23	1 case.	
Hong Kong, China	Sept. 26–Oct. 2	1 "	1 death.
Sagua la Grande, Cuba	Oct. 23–30	46 cases,	1 "
Fukushima Ken, Japan	Oct. 1–10	4 "	1 "
Kagoshima Ken, Japan	Oct. 1–10	1 case,	1 "
Miyagi Ken, Japan	Oct. 1–10	2 cases.	
Nagasaki Ken, Japan	Oct. 1–10		1 "
The Hokkaido, Japan	Oct. 1–10	7 "	5 deaths.
Edinburgh, Scotland	Oct. 16–23		1 death.
Glasgow, Scotland	Oct. 16–23	4 "	
Cartagena, U. S. of Colombia	Oct. 5–12	7 "	3 deaths.

Cholera.

Madras, India	Sept. 25–Oct. 1		3 deaths.
Tokyo Fu, Japan	Oct. 1–10	3 cases.	

The Late Dr. William Thurman.—The West End Medical Society, at its regular meeting held on the 7th inst., upon recommendation of a committee consisting of Dr. Edward J. Ware and Dr. Charles A. Kinch, adopted the following minute:

The West End Medical Society records with sorrow the death of an associate member, Dr. William Thurman, and offers the following testimonial of its regard and appreciation of his noble qualities:

He was a conscientious and successful physician and well informed in all the departments of medicine. He preferred family practice, and was especially interested in the little children. He was generous to the younger members of the profession.

He was interested in many charities, and freely gave his time, money, and professional talent to their advancement.

Changes of Address.—Dr. W. L. Allen, to No. 225 West One-hundred-and-twenty-third Street, New York; Dr. Frank H. Loucks, to No. 99 East One-hundred-and-sixteenth Street, New York; Dr. Brandreth Symonds, to No. 410 West Twentieth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 7 to November 13, 1897:*

CRAMPTON, LOUIS W., Major and Surgeon, is granted leave of absence for two months and twenty-six days, to take effect when, in the opinion of his department commander, his services can be spared.

Ware, Isaac P., Captain and Assistant Surgeon, is granted leave of absence for one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending November 13, 1897:*

Biddle, C., Surgeon. Detached from duty at the Navy Department and ordered to the U. S. Steamer Newport.

Gardner, J. E., Surgeon. Detached from the U. S. Steamer Dolphin and ordered home on waiting orders.

Lowndes, C. H. T., Passed Assistant Surgeon. Detached from the Washington Navy Yard and ordered to the U. S. Steamer Newport.

Waggener, James R., Surgeon. Relieved from the U. S. Steamer Marion and ordered to resume duties at Mare Island Navy Yard.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending November 11, 1897.*

Wheeler, W. A., Surgeon. When relieved by Passed Assistant Surgeon W. P. McIntosh, to rejoin station at Cincinnati, Ohio. November 10, 1897. Granted leave of absence for one month from November 15, 1897. November 11, 1897.

Wasdin, Eugene, Passed Assistant Surgeon. Detailed by the President for special duty at Havana, Cuba, for bacteriological investigation of yellow fever. November 11, 1897.

McIntosh, W. P., Passed Assistant Surgeon. When relieved by Passed Assistant Surgeon G. B. Young, to proceed to St. Louis, Mo., for temporary duty. November 10, 1897.

Magruder, G. M., Passed Assistant Surgeon. To resume command of service at Galveston, Texas. November 10, 1897.

Guiteras, G. M., Passed Assistant Surgeon. To rejoin station at Key West, Florida, not later than November 20, 1897. November 11, 1897.

Geddings, H. D., Passed Assistant Surgeon. Detailed by the President for special duty at Havana, Cuba, for bacteriological investigation of yellow fever. November 11, 1897.

Young, G. B., Passed Assistant Surgeon. To resume command of service at Memphis, Tenn. November 10, 1897.

Nydegger, J. A., Passed Assistant Surgeon. To proceed to Brunswick Quarantine, Georgia, for temporary duty, arriving there not later than November 30, 1897. November 10, 1897.

Greene, J. B., Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon G. M. Guiteras, to report at Bureau preparatory to detail as medical officer of the Revenue Steamer McCulloch. November 11, 1897.

Society Meetings for the Coming Week:

Monday, *November 22d:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *November 23d:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *November 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology and Section in Obstetrics and Gynæcology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *November 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *November 26th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *November 27th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Born.

MacMurrough.—In Jersey City, on Wednesday, November 10th, to Dr. and Mrs. F. K. MacMurrough, a daughter.

Rowe.—In St. Louis, on Tuesday, November 2d, to Dr. and Mrs. Earle V. Rowe, a daughter.

Married.

Hill—Dennis.—In Bishopville, South Carolina, on Wednesday, November 10th, Mr. Jacob Davis Hill and Miss Emma Leila Dennis, daughter of Dr. Robert E. Dennis.

Jiggitts—Powell.—In Canton, Mississippi, on Thursday, November 11th, Dr. James R. Jiggitts and Miss Mary Powell.

Opdyke—Ludeman.—In New York, on Tuesday, October 26th, Dr. Ralph Opdyke and Miss Millie Ludeman.

Died.

Allen.—In Philadelphia, on Sunday, November 14th, Dr. Harrison Allen, in the fifty-sixth year of his age.

Foster.—In Philip, Mississippi, on Sunday, November 7th, Dr. W. T. Foster.

Jones.—In Bastrop, Louisiana, on Saturday, November 6th, Dr. R. R. Jones.

Sutton.—In Rome, N. Y., on Wednesday, November 10th, Dr. Richard E. Sutton, in the sixty-sixth year of his age.

Obituaries.

HARRISON ALLEN, M. D., OF PHILADELPHIA.

The death of Dr. Harrison Allen removes a somewhat unique figure from the profession in this country. He is almost the last of the long line of physician-naturalists, of the men who lived by their profession while working hard at various problems in natural history. In fact, Dr. Allen lived a dual life and had a dual reputation. In Philadelphia he was recognized as one of the leading consultants in diseases of the throat and nose, and for many years had enjoyed in this specialty perhaps one of the most lucrative practices in the country. On what may be called his bread-and-butter specialty he has written always ably, but not voluminously. Those who knew him in his morning hours little thought that, like John Hunter, he was only earning the "damned guinea" so that he could devote much of his afternoons and his evenings to his favorite study of comparative anatomy, in many departments of which he was a recognized authority. One of his earliest works was a monograph on *The Bats of North America*. In 1869 he published a work entitled *The Outlines of Comparative Anatomy and Medical Zoology*. In 1884 appeared his large *System of Human Anatomy*, a work which is not consulted often enough, particularly by medical men who wish to look up special points of anatomy in relation to practical medicine and surgery. Dr. Allen made the dissection of the bodies of the Siamese twins, and his report *On Animal Locomotion*, as illustrating Muybridge's photographic work in Pennsylvania, was a very interesting and suggestive memoir. Of late years he had devoted a great deal of time to the investigation of crania.

Dr. Allen graduated at the University of Pennsylvania in 1861, in his twentieth year. He served as assistant surgeon during the civil war. The index of names in the *Medical and Surgical History of the War of the Rebellion* shows how often Joseph Leidy and Harrison Allen, both comparative anatomists, contributed to the reports accurate descriptions of post-mortems and of injuries. From 1865 to 1868 he was professor of comparative anatomy at the University of Pennsylvania, and from 1878 to 1885 professor of physiology. In 1894, when the Wistar Institute of Anatomy of the University of Pennsylvania was founded, he became its first director.

With the shy, retiring disposition of the thinker and student, Dr. Allen at the same time was a man of strong feelings and high aims in life. His untimely death has left a wide gap in the ranks of the profession in Philadelphia, and many aching hearts in friends who had learned to appreciate his affectionate, lovable nature.

W. O.

Letters to the Editor.

DR. THAYER'S LECTURES ON THE MALARIAL FEVERS.

The Johns Hopkins Hospital, Baltimore, *November 16, 1897.*

To the Editor of the New York Medical Journal:

Sir: In the courteous review of my *Lectures on the Malarial Fevers* which appeared in the last number of your journal there is a slight misquotation, doubtless inadvertent, which I am most anxious if possible to set right. The reviewer quotes me as saying, "It is also true that there are forms of paludal fever in which quinine is valueless." I have, on the other hand, always insisted throughout the book and in all my other writings that quinine is a specific for all forms of malarial infection.

W. S. Thayer, M. D.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Congress, held in Washington, D. C., Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. Charles H. Knight, of New York, in the Chair.

(*Continued from page 472.*)

Papillary Œdematous Nasal Polypi and their Relation to Adenomata.—Dr. Jonathan Wright, of Brooklyn, read a paper on this subject. (See page 653.)

Cases of Adeno-carcinoma of the Nose.—Dr. F. E. Hopkins, of New York, and Dr. G. A. Leland, of Boston, each reported a case of this disease. (See pages 657 and 663.)

Dr. Swain: Perhaps no other one of the gentlemen present more greatly appreciates at the present moment the value of Dr. Wright's paper upon the pathology of papillary œdematous nasal polypi and adenomata than I, because during the past year I have been working upon the same line, examining a large number of ear polypi and incidentally drawing some analogy between their development and that of nasal polypi, in the hope that some light might be thrown in this side way upon the origin of nasal œdematous fibromata. I have a number of sections of fibro-papillomata which Dr. Wright has described, and I regret that I did not bring them with me to this meeting. I think that he does not lay too great stress upon the activity of the fibrous tissue in producing the peculiar superficial appearances of this growth, especially the growth in a horizontal direction in producing corrugations upon the surface. There can be no doubt that in the ear polypi it is the growth of the fibrous tissue which mainly contributes to produce this condition. As regards the development of adeno-sarcomata, they occasionally present a hard appearance in the nose, rather than the soft character observed in Dr. Leland's case.

I had a case in which the first specimens presented the appearance of papilloma, but subsequent examinations led to the belief that it was a carcinoma. The growth extended into the pharynx and finally broke down and the patient died. There was no deformity of the face or neck. She suffered greatly from difficulty in deglutition, owing to a growth at the base of the tongue. I hope to report the case at length on some future occasion.

Dr. Wright: I have examined microscopically a few ear polypi, and have read some of the literature on the subject. The structure of some of the ear polypi is very similar to those occurring in the nasal fossæ. There seems, however, to be a larger proportion of ear polypi which present this adenomatous condition than we get in the nose. The most frequent site of this kind of growth is in the uterus. The cavernous bodies of the genital organs resemble those of the turbinate bodies in the nose, but whereas in the reproductive organs adenomatous growths are very common, they are very rare in the nose. The general character of adenoma is to be remembered; there is a close affinity to the malignant growths, and this lends some force to the views of those who hold that benign growths may degenerate into malignant ones from surgical injuries. Of late years evidence has accumulated which it is difficult to overcome, that the distinguishing characteristic of malignant growths is due to infection by micro-organisms, and recent investigators advance the view that the reason why adenomata degenerate so easily into malignant growths is because this development of glandular epithelial structure forms a good culture ground for the development of these peculiar organisms which are thought to be the cause of malignant growths.

The Nature and Symptoms of Atrophic Rhinitis.—Dr. W. E. Casselberry, of Chicago, read a paper on this subject. (See page 697.)

The Pathology of Atrophic Rhinitis.—Dr. J. Noland Mackenzie, of Baltimore, read a paper with this title. (See page 691.)

The Treatment of Atrophic Rhinitis.—Dr. C. C. Rice, of New York, read a paper, written conjointly with Dr. J. C. Mulhall, of St. Louis, on this subject. (See page 693.)

Dr. Wright: This subject is always an interesting one; unfortunately, so far, it has been also one of very little profit to discuss, simply because contributions made from time to time to the question have merely kept it open, without advancing anything toward its solution. It has been very many years, it seems to me, since anything has been added to the discussion which really contributed anything to our knowledge of the disease, and especially of its pathology.

So far as relates to the changes in the mucous membrane and the production of fibrous tissue, these can be shown to occur in atrophic rhinitis, but after a time this fibrous tissue also atrophies. Not only does the fibrous tissue disappear, but the bone itself atrophies, until finally the disease leaves only a hollow arch, consisting of the outer frame of the nose. The fibrous development is only a part of a general atrophic process, which extends to the bones, causing them to diminish in size. All the structures simply disappear.

I have talked of this subject with Dr. Park, who has done more in the line of the bacteriology of the nasal fossæ than any other man in this country, and he suggested that the Löwenburg-Abel coccus, the false diphtheria bacillus, or some other micro-organism might secrete some form of ptomaine which produced these curious results in atrophic rhinitis. Certainly, I am not acquainted with any other process in the human body which is at all comparable to it.

Another point to remember is that the morbid process usually begins at the time of puberty. Some cases are seen in childhood, but generally they are first observed at the time of puberty. Now, it is just at this time that structures containing cavernous tissue begin to be developed enormously, and we observe the production of erectile-tissue spaces in the nasal mucous membrane.

Another point is the very great preponderance of this disease in women. Nineteen out of twenty cases are in women. The symptoms of the disease frequently cease at the menopause or are greatly ameliorated. Rarely do we see persons suffering from atrophic rhinitis after forty years of age. A certain number die, it is true, before attaining this age, but the fact that so few are seen among old women is remarkable. It seems to be coterminous with the power of reproduction in the female.

As regards atrophic processes arising at the point where we most frequently find hypertrophy, it is to be remembered that this is also the place where we have the most evident development of erectile tissue. A number of years ago, when I thought that I knew a great deal more than I know that I do not know now, I was positive that atrophy was always preceded by hypertrophy, but I am not so sure now. This theory has not been proved. I believe that if we could examine the nasal mucous membranes of everybody in this room we should find inflammatory changes going on. So that we can not say that it is necessarily due to preceding inflammation. On the other hand, there is no warrant for saying that cases can arise *de novo*.

In many of these old patients who have previously suffered from ozæna you see a moist surface, although where the glands have been almost entirely destroyed, and the mucous membrane is greatly atrophied, you see a moist surface and no crusts. In cases originating after twenty years of age very few patients are troubled with crusts in the nose; the discharge is of a fluid character and does not tend to the formation of crusts.

With regard to stimulation, which Dr. Rice objects to, I always use some form of stimulation. A weak solution of thymol, for instance, seems to work very well. The chief indication, however, of course, is cleanliness.

Dr. Delavan: I concur in the final remark of the last speaker, at least to some extent; that a certain amount of stimulation, preferably of a mild character, is indispensable in these cases. As to electrical applications, the difficulties attending their application preclude their use in the majority of cases. Where electricity has been used, it has been in many cases effective, and its good results have depended upon what has just been referred to—namely, to its effects as a method of stimulation.

One form of treatment of atrophic rhinitis has been warmly advocated in England by Dr. George Stoker—namely, the local use of oxygen, the nasal cavities being exposed to the action of the gas for several hours each day. The value of this method has not yet been proved.

Dr. Van der Poel: I should like to refer to a plan of treatment which has but briefly been spoken of in this discussion. In one of the journals last year reference was made to some experiments made in Italy, based upon the similarity between the bacilli found in these cases of atrophic rhinitis and the Klebs-Loeffler bacilli of diphtheria, which had led to the use of injections of diphtheria antitoxines for the cure of atrophic rhinitis. I merely refer to it, as a case lately under my care tends to corroborate the efficacy of antitoxine in atrophic rhinitis. A woman thirty-two years of age who had been a sufferer for years with very severe ozæna, and who had been treated in the usual manner, special attention being given to the hygiene of the nose, became affected with laryngeal diphtheria. For this diphtheria I administered during a period of three days three thousand units of antitoxine serum, from which she made an uneventful recovery. I have examined her several times lately, and I requested her to come back to report from time to time. I found that her nasal difficulty had almost entirely disappeared. Of course, destruction of the turbinated bodies had occurred, but the crusts did not recur as before she had the diphtheria. Now it is only necessary to cleanse the nose twice a week.

Dr. Hartman: With regard to the electrical treatment referred to in the paper, I would say that I read a paper before this association on this subject some years ago, and that I have had no reason to change the views therein contained. The only objections to it are the difficulty of application and the unwillingness of patients to submit to it. I think the stimulation by this means is more advantageous than any rapid form of stimulation caused by the ordinary applications; although thorough cleansing is of course necessary in order to carry off the accumulated secretions and prevent further irritation from them.

Dr. Logan: This subject of atrophic rhinitis appeals to me very forcibly in view of the fact that in the climate in which I live we come in contact with a great many of these cases. The records of my clinic will show, I think, a surprisingly large percentage of these cases. The many methods of treatment hitherto suggested have for the most part resulted in nothing in my hands. In my experience the classical site of this disease is in the *middle* turbinate body, and not the inferior, as suggested by Dr. Mackenzie. I have seen many cases where the middle body *alone* gave evidence of disease. To me this seems very rational if we are willing to accept the theory of accessory sinus inflammation as suggested by Michel. The middle turbinate body serves as the drip-string or drainage canal to these cavities. The drying of these discharges by the currents of air, the formation of crusts, the contractile power exerted by these crusts, all together might produce mechanically the condition of atrophy.

In the light of mechanical production I have for the last year and a half opened up these accessory cavities and established free drainage, and I can exhibit some very pleasing results.

Dr. Casselberry: In German literature the term ozæna is now by common consent restricted to that type of atrophic rhinitis which is accompanied by fœtor. So used it means more than a bad odor, and it does not mean a bad odor from other causes, such as syphilitic bone necrosis. It is in this sense that I employed the term in my introduction to this discussion, and to make the subject still plainer, designated it the ozænal type of atrophic rhinitis. My remarks upon Fränkel's transition theory, which is advocated by Dr. Mackenzie were not intended as "strictures." I accept this theory in part, but regard it as inadequate in explanation of all cases, and notably those of early infancy. The suggestion that the previous hypertrophic stage occurred in intra-uterine life I regard as an evasion because of its improbability.

The remarks of Dr. Rice are very suggestive. I have often been requested by these patients to consider for them a choice of climate. What part of the United States can we recommend? Those members who are familiar with the climates of different parts of the country, particularly in the South, might inform the association of localities favorable for such cases. On purely theoretical grounds I have refrained from sending them to the dry regions of the West, and have recommended the seashore or warmer moist and salubrious parts. Nevertheless, I have at least one patient who of late has resided in Denver with certainly no greater difficulty with his dry rhinotracheitis than he suffered in Chicago.

Dr. Mackenzie, in reply to Dr. Logan, said that the production of atrophy by the dripping of pus and the formation of crusts on the mucous membrane had no parallel in all pathology. Such a view had no proper place outside of the imagination. In reply to Dr. Rice's mention of his use of strong solutions of bichloride of mercury, he said that was a long time ago, at the time of the great interest in the announcement of Koch's discoveries, which led to the use of strong antiseptics. In later years he had recanted and advised very weak solutions. He had already replied to two of Dr. Casselberry's questions in his remarks. In regard to the use of the term sclerosis, instead of describing a stage of hypertrophy and a stage of atrophy, he would simply substitute the terms hypertrophic and atrophic sclerosis.

Oxygen gas was, of course, stimulating, but its action, with that of hydrogen dioxide, was superficial.

Dr. Rice: I think that Dr. Roe, of this association, first suggested the use of oxygen in the treatment of atrophic rhinitis. I believe that several German authorities started the theory that the atrophic process originated in the sinuses, but the value of treatment by curetting and other measures to secure drainage and cleanliness does not depend upon this theory.

With regard to the bichloride of mercury, I will state in justice to Dr. Mackenzie that it was a long while ago, and that he even then cautioned against the use of strong solutions.

With reference to the question of climate, I think that most of us are of the opinion that for these cases the seashore is more comfortable to the patient, and the mucous membrane more moist than when the person resides far inland.

(To be continued.)

Book Notices.

A Practical Treatise of Sexual Disorders of the Male and Female. By Robert W. Taylor, A. M., M. D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York, etc. With Seventy-three Illustrations and Eight Plates in Color and Monotone. Lea Brothers and Company: New York and Philadelphia. Pp. xi-2 to 451. [Price, $3.]

The importance of works treating of sexual disorder has at all times been recognized by the profession at large. The author of such treatises has before him, not only the task of dealing with the topic from the professional standpoint—wide in itself—but that of confronting and portraying phenomena which have, indirectly, immense social and moral significance.

The prevailing tendency of *fin de siècle* life, replete with sexual disorder, renders a treatise of this character more than usually opportune. Dr. Taylor's wide experience and scientific manipulation of the subject assure for this work a wide field of usefulness.

This volume of 451 pages purports to be, and is a portrayal of the various forms of sexual disorder from the standpoint of anatomy, pathology, and physiology, and forms an unbiased sequence of study that can not but prove of interest to the general practitioner, as well as to those whose particular field of work and interest lies within this branch of surgical science.

The book begins with a brief description of the anatomy of the male sexual apparatus, in the opening chapter, and there is a description of their function in the second, after which comes an account of the nature and composition of the seminal fluid. Here the subject of spermato-genesis is considered, and the diagnostic value of Böttcher's sperma crystals in secretions from the sexual tract is discussed.

Impotence in the male forms the basis of discussion for the succeeding eight chapters. The scientific subdivision into four groups is adopted for facility of comprehension, and impotence is described as psychical, symptomatic, atonic, and organic. Under the head of psychical impotence the reader will find many valuable suggestions as to treatment, and we can not but think that Dr. Taylor's tactful handling of this topic will relieve it of much of the unclean mysticism and semi-quackery with which it is wont to be enshrouded.

Certain morbid conditions of the penis, urethra, prostate, and seminal vesicles, reacting upon the sexual sphere, are described as causative of symptomatic impotence, according to a more natural classification than that adopted in some other works. Under the head of organic impotence, as causative factors, are discussed congenital defects and malformations of the penis and lesions of its integument—these all as preventing intromission—as well as some rare forms of hyperplastic and traumatic changes in the corpora cavernosa and curvature and fracture of the penis.

Sterility in the male is next taken up, in natural sequence, and is treated of under the two main conditions producing it, azoospermatism and aspermatism. Under the former cause of sterility are fully and carefully described the various changes in the sexual apparatus due to venereal diseases and to tuberculosis; also abnormal conditions of the semen. Under the latter cause of sterility vesicular and urethral lesions are spoken of. Particular stress is laid upon the morbid affections of the prostate alleged to be the most frequent cause of sexual weakness and impotence. Various lesions of this gland are minutely and scientifically discussed, although a full treatise on hypertrophy of the prostate is omitted, as not directly pertinent. We should have been more grateful to the author could the treatment of this important affection have been less briefly dismissed. Upon the discussion of the prostate follows that of inflammation of the seminal vesicles. This is very complete.

The subjects of masturbation and sexual excesses are considered in chapter xix.

The author is inclined to the belief that undue sentiment and exaggeration have been indulged in by writers on this topic, especially by quacks, and he seems rather to regret the necessity of discussing these unpleasant subjects. While we deplore exaggeration in the discussion of subjects of such importance as we believe these to be, and regret the prevailing tendency to sexual quackery, if we may use the term, nevertheless we can not sympathize with the author in his apparent reluctance to broach the subject, and we do not find the expected information in his brief description. It is in just such a book as this, by a surgeon of such experience and skill, that we should hope to find a full and complete annunciation of the facts concerning these matters. A reputable and thorough treatise based upon a wide experience, scientifically presented, is the surest antidote against the nauseating literature that spasmodically confronts us and the reckless aggressiveness of quacks.

The chapter on spermatorrhœa contains excellent advice, and in a clear and concise manner lays proper stress upon the exaggerated significance of this term as descriptive of disease.

Varicocele is considered in chapter xxi, and among other useful statements is one to the effect that this affection does not cause atrophy of the testicle, but that, instead, arrest of development takes place preceding puberty as a result of varicocele. The author advises Bennett's operation of excision.

Sexual worry, hypochondriasis, and sexual neurasthenia are next dealt with, and in their treatment Dr. Taylor most wisely draws the attention of the reader to the adoption of kindly measures for improving the morale, and urges conservatism.

Following these subjects a chapter is devoted to conjugal onanism, an appreciation of which is of increasing importance as social and economical demands become more onerous, particularly among the well-to-do.

A useful classification has been adopted in the discussion of priapism and sexual erethism, one which should be of special value in diagnosis. The subject is concisely and carefully explained. A short chapter on sexual perversion follows.

Sterility in women in its various aspects is presented to the reader in the remainder of the volume. Considerable attention is paid to the pathological conditions of the vulva, and the subjects of new growths, hypertrophies, vegetations, chancroidal affections, syphilitic hypertrophies, and deformities are treated at length. These affections are well illustrated by a number of well-executed cuts. In the concluding chapter the author presents for study a peculiar form of new growth of the vulva originally described by him in 1890, and gives a number of illustrations of the gross and microscopical appearances of these lesions.

This volume, then, the result of many years' experience and observation, contains much information of value to the profession. Including deductions based on original and continued investigation, it should prove a useful manual. While it is a treatise on sexual disorders, it is a basis of the study of genito-urinary diseases as well.

As a whole, it is a helpful contribution to the study and management of the disorders of the sexual apparatus.

Harn- und Geschlechtsorgane. Die Muskeln und Fascien des Beckenausganges. (Männlicher und weiblicher Damm.) Von Professor Dr. M. Holl, in Graz. Mit 34 Original-Abbildungen im Text. Handbuch der Anatomie des Menschen. Herausgegeben von Professor Dr. Karl von Bardeleben. Siebenter Band. Zweiter Theil. Zweite Abtheilung. Jena: Gustav Fischer, 1897. Pp. iv–161 to 300. [Preis, 5 Mark.]

The author's descriptions of the muscles and fasciæ of the pelvic floor are based on studies of comparative anatomy as well as on both recent and hardened preparations. They include descriptions of the typical forms of the muscles in the male; differences of the muscles in the female; homologous muscles in different classes of animals which illustrate the phylogenesis of these muscles; and the frequent variations from the typical form. These variations are to be attributed chiefly to changes in function caused by the rudimentary condition of the caudal division of the spinal column in man. The muscles are classified, according to their origin, as muscles of the caudal division of the spinal column, muscles of the anus, muscles of the genito-urinary tract, and unstriped muscles.

The author differs from the majority of other writers in regarding the so-called levator ani muscle as consisting of two independent muscles; in this he agrees with Henle, but he bestows new names upon them.

The description of the fasciæ of the pelvic floor is greatly simplified by considering them as primarily coverings for the muscles and by recognizing the fact that strongly developed fasciæ may be continued by means of loose connective tissue.

Holl's work is a concise, thorough, and remarkably clear discussion of this intricate region of anatomy. A ready comprehension of the text is frequently facilitated by the woodcuts, which make up in distinctness what they sometimes lack in artistic finish.

Suite de monographies cliniques sur les questions en médecine, en chirurgie, en biologie. No. 3. Le lavage du sang. Par le Dr. Félix Lejars, Agrégé, chirurgien des hôpitaux de Paris, etc. Paris: Masson et Cie., 1897. Pp. 42.

Dr. Lejars briefly reviews under this title the subject of the introduction of saline fluids into the circulation. He gives excellent descriptions of the technics of the different procedures, a *résumé* of the experimental work which has been done on sound and infected animals, and a judicious analysis of the clinical indications and contraindications for its therapeutic application. The most interesting portion of the essay is that which treats of the use of large injections in surgical and medical intoxications. The author declares that the difficulty and dangers of the operation of intravenous injection have been greatly exaggerated and that, while subcutaneous injection is to be preferred ordinarily, the former is so frequently of urgent necessity that its safe performance should be within the ability of every physician.

The Normal and Pathological Circulation in the Central Nervous System (Myelencephalon). Original Studies. By William Browning, Ph. B., M. D., Attending Neurologist to the Kings County Hospital, etc. Philadelphia: J. B. Lippincott, 1897. Pp. 8–9 to 171. [Price, $1.50.]

This book consists of a series of articles, most of which have been published before. It is not, as its title indicates, a treatise on the cranio-spinal circulation, but a collection of essays which, in their variety, range from On the Remains of a Foramen Spheno-temporale in Man to the Clinical Applicability of Lumbar Puncture. While many of the articles are valuable, the reason for their association in book form is not plain.

BOOKS, ETC., RECEIVED.

A Text-book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-chirurgical College, Philadelphia, etc. Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. 3 to 1287. [Price, $5.50.]

Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. Second Edition, revised and enlarged. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Illustrated with Two Hundred and One Engravings and Thirteen Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–18 to 605. [Price, $4.75.]

Clinical Diagnosis. The Bacteriological, Chemical, and Microscopical Evidence of Disease. By Dr. Rudolph v. Jaksch, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic, in the German University of Prague. Translated from the Fourth German Edition and enlarged by James Cagney, M. A., M. D., member of the Royal College of Physicians of London, etc. Third Edition. With Numerous Illustrations partly in Colors. London: Charles Griffin and Company, Limited, 1897. Pp. xxv–523. [Price, $6.50.]

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M. D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore, etc. Second Edition, revised and enlarged. With One Hundred and Thirty-three Illustrations on Wood and Fourteen Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xx–17 to 563. [Price, $3.50.]

A Handbook of Midwifery. By W. R. Dakin, M. D., B. S. (Lond.), F. R. C. P., Obstetric Physician and Lecturer on Midwifery and Diseases of Women to St. George's Hospital, etc. With Four Hundred Illustrations (nearly all of which are original). London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xx–629.

Pathological Technique. A Practical Manual for the Pathological Laboratory. By Frank Burr Mallory, M. D., A.M., Assistant Professor of Pathology, Harvard University Medical School, etc., and James Homer Wright, A. M., M. D., Director of the Laboratory of the Massachusetts General Hospital, etc. With One Hundred and Five Illustrations. Philadelphia: W. B. Saunders, 1897. Pp. 11 to 397. [Price, $2.50.]

Spinal Caries (Spondylitis or Pott's Disease of the Spinal Column). By Noble Smith, F. R. C. S. Ed., L. R. C. P. Lond., Surgeon to the City Orthopædic Hospital, etc. Second Edition. London: Smith, Elder, & Co., 1897. Pp. 153. [Price, 5*s.*]

Lectures on Physiology. First Series on Animal Electricity. By Augustus D. Waller, M. D., F. R. S., Fullerian Professor of Physiology at the Royal Institution of Great Britain, etc. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. viii–144.

Doctor Mendini's Hygienic Guide to Rome. Translated from the Italian, and Edited with an Additional Chapter on Rome as a Health Resort, by John J. Eyre, Member of the Royal College of Physicians, etc. London: The Scientific Press, Limited, 1897. Pp. xiv–188. [Price, 2*s.* 6*d.*]

Medical Education and Registration; United States and Canada. By William T. Slayton, M. D. (Harv.), Fellow of the Massachusetts Medical Society, etc. Hyde Park, Vermont: Lamoile Publishing Company, 1897. Pp. 7 to 105. [Price, 75 cents.]

Die Stricturen der Harnröhre und ihre Behandlung. Von Dr. med. H. Wossidlo in Berlin. Leipzig: C. G. Naumann, 1897. Pp. viii–185.

Kalender für Frauen- und Kinderärzte. Von Dr. med. Eichholz, Bad Kreuznach, und Dr. med. Sonnenberger, Worms. II. Jahrgang, 1898. Kalendarium Januar-März. Pp. 176.

Twenty-third Annual Report of the Secretary of the State Board of Health of the State of Michigan. For the Fiscal Year ending June 30, 1895.

Proceedings and Addresses of the Sanitary Convention held in Hanover, Michigan, June 3 and 4, 1897.

Comparative Frequency of Stone in the Bladder in the White and Negro Races. By George Ben Johnston, M. D., of Richmond, Virginia. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

The Symptoms and Treatment of Hepatic Abscess, with a Report of Seventeen Cases. By George Ben Johnston, M. D. [Reprinted from the *Transactions of the American Surgical Association.*]

Splitting the Kidney Capsule for the Relief of Nephralgia. By George Ben Johnston, M. D. [Reprinted from the *Medical News.*]

Value to the Public of State Medical Societies. By George Ben Johnston, M. D. [Reprinted from the *Medical Register.*]

Acquired Umbilical Hernia in Adults. By George Ben Johnston, M. D. [Reprinted from the *Medical Register.*]

Urinary Antiseptics in Cystitis. By Arthur R. Elliott, M. D. [Reprinted from the *North American Practitioner.*]

Stone in the Kidney. By Charles R. Robins, M. D. [Reprinted from the *Virginia Medical Semimonthly.*]

Miscellany.

Kodo Poisoning.—In the *Indian Lancet* for October 1st, Dr. Sripati Sahai relates his experience with a number of interesting cases of kodo poisoning which came under his observation on August 16th. The patients had eaten bread of unhusked kodo, either pure or mixed with various proportions of wheat and other cereals, at about eight or nine o'clock of the previous evening. In almost all the cases the symptoms of poisoning began about 11 or 12 P. M., and in all the cases they were practically the same. The patients complained of giddiness and drowsiness. There was a peculiar trembling of all the voluntary muscles, somewhat like the clonic spasms in the second stage of epilepsy. The movements were so violent that the patients could with great difficulty be held in position. They were unable to walk or stand upright. In some cases the skin of the face, shoulders, and ankles was abraded owing to the friction of the parts against the ground. The intellect was not affected, and, although the patients were somewhat confused and dull, they could answer questions intelligibly. There was no pain in the head or other parts of the body. In most cases the symptoms began with violent attacks of vomiting, and some of the patients still vomited when they were brought to the hospital. The vomited matter consisted of food and, in three or four cases, of a reddish liquid. There was no diarrhœa, abdominal pain, or tenderness. In some cases there was suffusion of the eyes, with more or less photophobia, but the pupils were normal and sensitive to light. The temperature and pulse were normal, except when the patients were disturbed; then the pulse became rapid and the convulsive movements increased. The heart sounds were normal. There was no opisthotonos. In the majority of the cases the symptoms began to abate twelve hours after the food had been taken, and the patients were able to walk home unassisted in about twenty hours. This occurred in those who had vomited freely or had taken a smaller quantity of the kodo. In the cases where there had been little or no vomiting recovery took place slowly, the symptoms being severer and more prolonged. No particular line of treatment was adopted. Emetics were given to those who did not vomit freely, and stimulants to those who appeared much depressed.

Dr. Sahai states that he does not know the botanical name of kodo, but that it is a cereal of a dark brown color, of about the size of a mustard seed. It is sown early in June and harvested in October. It is comparatively cheap and largely consumed by the lower classes. According to some of the cultivators, says the author, a kind of poisonous grass grows with the kodo and the plants or the seeds of the two are indistinguishable, and the produce of the grass becomes mixed with the kodo grain. Others say that a peculiar kind of kodo is in itself poisonous.

Dr. Sahai thinks that the symptoms in these cases are sufficiently distressing and alarming to warrant an investigation as to the nature of the poison, and for this reason he brings the subject to the notice of the profession.

A Case of the So-called Hypertrophic Pulmonary Osteo-arthropathy of Marie, without Pulmonary Disease.—The following case, which came under the observation of Dr. John Lindsay Steven at the Glasgow Royal Infirmary, is published in the October number of the *Glasgow Medical Journal:* The patient, a married man, aged forty-eight years, was sent to the author on account of progressive enlargement of the hands and feet, of about nine months' duration in all. On examination a very striking alteration in the shape of the fingers, hands, wrists, and forearms was at once apparent. The fingers were thick and clubbed at the ends, with great incurvation of the nails, so that the free extremities of almost all the digits were covered by the bent nails and not by the skin. This was particularly the case in the thumbs, which presented the parrot's-beak appearance described by Marie. The enlarged extremities of the fingers resembled slightly the bulbous finger ends of phthisis, chronic bronchitis, or cyanosis, but there was no wasting of the finger behind the bulbous point; the whole finger was thickened, particularly at the joints. The skin of the finger tips was not livid. The nails were not decidedly striated, and were increased in length, but not greatly in breadth. The fingers were not obviously increased in length. The whole hand had a thickened and hypertrophied appearance, the right being distinctly larger than the left. The circumference of the right hand at the metacarpophalangeal joints was eight inches and three quarters; of the left, eight inches and a quarter. On account of stiffness and swelling of the fingers the right hand could not be closed, and the left only feebly. The metacarpal regions of the hands were less altered than the fingers and wrists, but a Röntgen-ray picture showed that in the metacarpal bones, as well as in the phalanges, there was a very distinct subperiosteal new formation of bone.

Hypertrophy of the distal extremities of the forearm bones imparted a striking appearance of enlargement to the wrist joints, which, with slight narrowing of the carpal region, resembled a little the deformity of rickets. The surface of the thickened part was rough, and the thickening and roughness could be traced quite up to the middle of the forearm, above which the bones again appeared to be of normal size. The picture showed very marked subperiosteal formation on the radius and ulna, extending up the shafts for nearly three fourths of their length. The wrist joints were somewhat stiff, and the circumference of the right wrist over the enlarged bones was eight inches and a quarter; of the left wrist, eight inches.

The face presented nothing unusual, and the tongue was not enlarged. Sensibility to touch and pain in the upper extremities was normal, and the senses of taste, hearing, and smell seemed to be quite normal. No retrosternal dullness could be detected.

The lower extremities presented a hypertrophic condition in all respects comparable to that in the hands and forearms. The toes were distinctly bulbous, and there was great thickening of the lower ends of the leg bones, especially in the malleolar region. Pressure over the right malleoli caused very considerable pain. The circumference of the right ankle was eleven inches and a quarter; of the left, eleven inches; of the feet at the metatarso-phalangeal joints, ten inches. The sense of touch and pain in the lower extremities was normal. The patellar-tendon reflexes were slightly exaggerated and there was a slight tendency to ankle clonus. In walking the patient experienced a very considerable degree of stiffness and weakness in the knees and ankles, particularly in the former, so that he was no longer able to carry heavy weights as before. He had also much pain in the knee joints, which were considerably swollen and creaked on being moved.

No deformity of the trunk or of the spinal column was noticeable. The cremasteric reflex was normally present. The patient had never had any trouble with his bladder; he was occasionally constipated, but during the latter part of his stay in the hospital his bowels had been quite normal.

The thyreoid region presented nothing unusual. The lobes and the isthmus of the thyreoid gland could be felt, but there was no atrophy or hypertrophy of the organ.

At the time that the changes in the feet and hands were first observed the patient began to experience some dimness of vision. On ophthalmoscopic examination it was found that the right disc had a certain woolliness of aspect all over, with an ill-defined margin, especially at the upper and lower parts, and to a lesser extent at the inner portion; it was relatively well defined at the outer sides. The only other noteworthy fact was that of slight fullness and tortuosity of the veins. The macular region and the fundus generally were normal. The left fundus presented similar appearances. Both discs were, if anything, somewhat hyperæmic, but they were not swollen.

On the whole, Dr. Steven thinks the case may be taken as corresponding most closely to Pierre Marie's account of what he has designated as hypertrophic pulmonary osteo-arthropathy. In all essential particulars, save one, he says, it conforms to the account of the deformity to which Marie has given this name, the point of difference being that in this man's case there was and had been no chronic pulmonary or pleural affection. For this reason, says Dr. Steven, there can be no explanation as to the subperiosteal osseous growth causing the deformity described as the result of the absorption of poisonous toxines from diseased lung or pleura acting injuriously upon the nutrition of the bones. It can not be supposed either, he adds, that the affection was due to a chronic diffuse tuberculosis of the bones, as there was absolutely no evidence of tubercle in the patient, who was a remarkably healthy looking man.

Dr. Steven thinks that the only hypothesis to be advanced is that the disease in this case might have been rheumatic in its essential nature, although there were none of the classical deformities associated with chronic rheumatic arthritis.

Concerning the treatment, says the author, it was, on the whole, very ineffectual. At first the patient was given thyreoid gland, with the effect of reducing his weight eight pounds in two weeks, but with no influence on the affected parts. Alkalines, massage, and saline baths seemed to cause alleviation of the pain and perhaps an arrest of the progress of the affection. Before he left the hospital the patient's hands presented a more normal appearance, and he could close the right hand completely.

Bradydiastole as a Prognostic Symptom in Affections of the Heart.—In the *Journal des praticiens* for October 30th M. Huchard calls attention to a peculiar rhythm which he desires to make known under the term bradydiastole, in which a phenomenon contrary to that of embryocardia is produced—namely, a considerable prolongation of the diastolic pause.

The rhythm of the heart, he says, comprises the regular succession of three acts, as follows: 1. Auricular systole. 2. Ventricular systole. 3. General diastole, or rest of the heart. But, from a clinical point of view, the first period of cardiac revolution begins at the ventricular systole with its two sounds of the beginning and of the end separated by a short silence. The second period, that of ventricular repletion, is silent, and the long silence equals exactly the duration of the first sound, of the short silence, and of the second sound.

It is not the same, continues M. Huchard, when the considerable prolongation of the diastolic pause is shown, more frequently with an almost normal number of cardiac contractions, for example, from seventy to eighty a minute. Then, the rhythm of the heart presents something peculiar which is easily ascertained upon auscultation. The two first sounds are very near together, scarcely separated by the short silence, the duration of which has considerably diminished, to such a degree that tachycardia may be suspected. But this tachycardia is only apparent, and the long silence has gained in duration that which the short silence has lost with the first and the second sound. This, and especially the first sound, presents also more frequently an abruptness which is very distinct in character; the cardiac impulse has the appearance of strength, and all clinicians have been able to observe cases in which this abruptness and this brevity of the systole gave the illusion of a still vigorous ventricular contraction when the heart was weak and a fatal termination was near. In these cases, if the two sounds are near together, they are very far away from the other sounds of the cardiac revolution which continue to follow, which is due to the unusual slowness and prolongation of the diastole. This, says M. Huchard, constitutes the very important clinical symptom to which he gives the name of bradydiastole.

It may be observed occasionally, but in a feeble degree, in comatose conditions, in grave cerebral hæmorrhages, in uræmia, etc. In aortic insufficiency, especially in that of arterial origin, the prolongation of the diastole is almost a normal occurrence; it is not of great importance so long as the fibres of the myocardium are not very much altered, so long as they preserve enough resistance and elasticity to recover themselves and to drive forward to the systole following the superabundance of blood which the ventricular cavity has received during the somewhat prolonged diastolic pause. But when the cardiac muscle, invaded by sclerous tissue, can no longer react, except incompletely, upon the bloody mass, it is allowed to dilate more and more, and it is thus that the bradydiastole becomes a sign which is often premonitory of cardiectasis. Systole is performed abruptly and rapidly, and in these conditions this abruptness becomes itself an indication of fatigue and extreme weakness of the heart, much more than the attenuation of the first sound, on which physicians have insisted too much, the prognostic importance of which has been singularly exaggerated.

M. Huchard states that he has often observed the rhythm of bradydiastole at the approach of the death struggle and during its continuance, and he is of the opinion that this peculiar rhythm is a premonitory symptom of approaching death in other affections as well as in heart troubles. He states, however, that his observations are not yet sufficient in number to warrant him in making a positive and definite statement in this respect. But one thing he expressly affirms, and that is the great gravity of this symptom in digitalis poisoning and in the course of asystole. He states that he has observed three cases of this form of poisoning in which he was able to ascertain the existence of the bradydiastolic type premonitory of the fatal termination for several days. But the bradydiastolic rhythm assumes a considerable prognostic value in the last stage of asystole in all chronic diseases of the heart.

From the many facts observed by the author he deduces the following conclusions: 1. When in the course of digitalis poisoning or in the last stage of asystole in heart affections the bradydiastolic rhythm is observed continuously for several hours, and especially for several days, it is the precursory symptom of a progressive and ultimate cardiac dilatation. 2. In these conditions digitalis no longer realizes its antasystolic rôle; it becomes inefficacious and even injurious, for obvious reasons, principally because it contributes to lengthen the diastolic pause still more.

The author states that bradydiastole is not the premonitory or contemporary symptom of all forms of dilatation of the heart, but only of the peculiarly grave dilatation of which he speaks. He adds that when it is observed one or more times without having been followed by grave accidents, it becomes an admonition to the clinician, who should always fear then the imminence of a rapidly progressive dilatation of the heart.

M. Huchard considers this symptom of the greatest importance. It often enables the physician to foresee and sometimes to prevent the progressive dilatation of the cardiac cavities; it shows that, in these cases especially more than in simple asystole, the heart really receives at each one of its revolutions much more blood than it can throw out; it indicates that, in this condition, digitalis should be absolutely proscribed, since, having itself the effect of lengthening the diastolic period, it may become instrumental in causing bradydiastole. It shows, finally, that the two principal therapeutic indications consist in combating early, by practising phlebotomy several times, the obstruction of blood in the ventricular cavities; by exciting the myocardium, which is in danger of extreme weakness and of rapid dilatation, with strychnine and sparteine in large doses; and by hypodermic injections of caffeine and of camphorated oil.

The New Building of the Bellevue Hospital Medical College.—The laying of the corner stone took place on Saturday afternoon, November 13th. Mr. D. O. Mills, president of the board of trustees, presided. After an invocation by the Rev. Roderick Terry, D. D., the stone was laid by Dr. Lewis A. Sayre, emeritus professor of orthopædic surgery. In the lecture room of the Carnegie Laboratory addresses were delivered by Dr. Landon Carter Gray, representing the alumni; the Rev. Dr. Roderick Terry, of the board of trustees; and Dr. John S. Billings, representing the medical profession.

Hysterectomy by an Improved Method for Intraligamentous Cysts.—At the recent meeting of the Southern Surgical and Gynæcological Society Dr. Rufus B. Hall, of Cincinnati, read a paper in which he said he believed the mortality from operations for intraligamentous cysts was much higher than the statistics would lead one to believe. Many of the deaths were due to hæmorrhage, either on the table or within a few hours after the patients were put to bed. He thought the operation he proposed would save many lives, as it was practically a bloodless one. It was applicable to cases in which the adhesions were very firm and the cyst could not easily be stripped from the pelvic floor. He described the operation as follows: "First tap the cyst and empty it. Ligate the ovarian artery on the tumor side at the pelvic border. Ligate the ovarian artery on the opposite side, outside the healthy ovary. Divide the broad ligament. Divide the peritonæum above the top of the bladder and push the bladder down. Ligate the uterine artery on the healthy side. Cut across the cervix and clamp or ligate the uterine artery on the tumor side. The blood supply is then cut off and the patient has not lost a drachm of blood. The capsule of the tumor can now be divided above the top of the bladder and at a suitable point behind, and the tumor enucleated from below upward with very much greater ease than from above downward and with corresponding safety to the ureter, the rectum, and the iliac vessels. Close the peritonæum over the pelvic floor with a running suture of catgut." This method, he says, brings every part of the field of operation into view. The ureter can be seen, recognized, and pushed aside. The adhesions are separated along the line of cleavage instead of against it, as in the old method.

A Method of Producing Immunity against Tuberculous Infection.—In an article on this subject in the *Lancet* for October 30th Mr. Peter Paterson states that in his investigations concerning the treatment or prevention of tuberculosis a number of experiments were made so as to understand the course, terminations, and post-mortem appearances of tuberculous disease when following its usual course after the artificial introduction of tubercle bacilli. For this purpose a number of rabbits and guinea-pigs were inoculated by way of the peritoneal cavity, the anterior chamber of the eye, the veins, and the subcutaneous tissues, with the result that the animals died from tuberculosis after a lapse of varying periods. On post-mortem examination numerous nodules were found in the internal organs, and they had the typical structure recognized as that of tubercle. In these experiments, says the author, the bacillus of mammalian tubercle was employed, and all the inoculations made into mammals were uniformly successful in inducing the disease, but on trying to produce tuberculosis in birds by injections of the same organism the results were invariably negative. In six fowls Mr. Paterson injected into the veins doses varying from a cubic centimetre to ten cubic centimetres of a very opaque, almost milky-looking, watery suspension of virulent mammalian tubercle, but the birds remained healthy and strong. After periods varying from ten weeks to five months they were killed, when their organs were found to be free from tubercle even after careful microscopic examination. Yet, says the author, repeated outbreaks of tuberculosis among birds are on record, and in these instances the disease has spread very rapidly among the birds and has been eradicable only by killing all the infected fowls and thoroughly washing the aviaries with antiseptics. In these cases the only methods of infection could be by inhalation and swallowing, and in both these ways the number of bacilli taken at any one time would be comparatively small, and they would be brought into contact with healthy epithelium, in either the lungs or the intestine. Yet these few bacilli were able to overcome the resistance offered by this epithelium, gain a nidus in the body, and ultimately lead to the death of the infected birds. On the other hand, in the author's experimental cases countless numbers of bacilli were injected directly into the blood stream and had therefore no primary resistance to overcome in the form of epithelium, and yet they disappeared from the body of the inoculated animals without leaving any visible trace.

Thinking there might be something in the external conditions of these birds which were infected accidentally while running about that made them more liable to infection than those kept in confinement, the author investigated this point by keeping five fowls under the same conditions. Of these, three were treated with five cubic centimetres of a watery suspension of virulent mammalian tubercle injected into the peritoneal cavity, another had the same dose of virulent fowl tubercle introduced into the peritoneal cavity, while the fifth was fed on two occasions with food which had a cubic centimetre of the same watery suspension of virulent fowl tubercle mixed with it. At the expiration of ten weeks the birds were killed, when those which had been injected with virulent mammalian tubercle bacilli were found to be free from tuberculosis, while the bird which had been inoculated with the virulent fowl tubercle showed numerous tubercles in the viscera, and the one which had been fed with tuberculous food showed tuberculous nodules of the intestine and a tuberculous ulcer of the gizzard.

If there are two varieties of tubercle, continues Mr. Paterson, and man is susceptible to both, a culture obtained from a patient suffering from fowl tubercle should show the characteristic appearances of that organism, as cultures of fowl tubercle grow more rapidly and are moister than those of mammalian tubercle.

In injecting the sterilized fowl tubercle directly into the blood stream, says the author, as a means to prevent the extension of tuberculous infection, there is the danger that some of the dead bacilli will be deposited in some part of vital importance and set up an inflammation which may have serious results. On the other hand, he adds, subcutaneous injections produce a caseous mass which, on being discharged, carries with it a large number of the bacilli which had been introduced; consequently the full advantage of the injections is not obtained. On taking into consideration the immunity shown by fowls against infection by mammalian tubercle, Mr. Paterson experimented as to the effect of their serum when modified by the presence or action of the bacterio-proteids of fowl tubercle. Sterilized suspensions of fowl tubercle were injected into the peritoneal cavity of fowls. The injections were begun by giving ten cubic centimetres of a sterilized watery suspension of the bacilli, and in subsequent injections (they were repeated at intervals of three weeks) the quantity was increased at first by five cubic centimetres and afterward by ten cubic centimetres, so that the quantity introduced on the sixth injection was fifty cubic centimetres and the total amount a hundred and sixty-five. After the expiration of three weeks the injection of fifty cubic centimetres of the suspension was repeated every third week. Under this treatment the birds began gradually to be able to stand the action of the injections with no apparent detriment to health. In order to ascertain if the serum of the fowls so treated had any effect on the growth of tubercle bacilli, both fowl and mammalian, the author abstracted some blood from the fowls, after allowing at least a week to intervene between the last injection of sterilized fowl tubercle bacilli and the venesection, and not taking any blood until the sixth injection had been given. The serum was allowed to separate and a quantity of this was drawn into sterilized test tubes. A number of these were then inoculated with virulent fowl tubercle and others with virulent mammalian tubercle, and they were placed in the incubator. After some time there was a distinct growth in the tubes inoculated with the fowl tubercle, but no apparent increase in the number of bacilli in the tubes which had been inoculated with mammalian tubercle bacilli, although they were kept for three weeks in the incubator.

Mr. Paterson then proceeded to try the effect of this serum on healthy rabbits and guinea-pigs, and he injected three cubic centimetres into the subcutaneous tissue of these animals. This was followed in a few hours by a marked rise of temperature, the rise in some cases reaching 3° F. Twenty-four hours afterward there was a thickening at the seat of injection and extending for some distance around this point. The injection was repeated once a week until fifteen cubic centimetres of serum had been introduced in all. During this period the animals lost weight, and this emaciation continued to progress for four or five weeks after the cessation of the injections. Sections made from the swelling resulting from the injections of serum were found to consist almost entirely of round cells, epithelioid cells, and a few large multinucleated cells. At other points the sections showed small foci having all the appearances of caseation, while at others the cells were undergoing a degenerative change, as shown by their staining very faintly. Apart from the caseation, continues the author, these appearances denote the presence of a chronic inflammation only, but the caseation and degeneration reveal the presence of some substance deleterious to the cells of the inoculated animal, and that this deleterious property does not belong to the normal serum of fowls was shown by injecting normal serum in similar doses into rabbits. These injections produced a very slight rise of temperature and very little swelling, but nothing similar to the degenerative changes previously noted.

The author then tried the effects of the serum on tuberculous animals. A number of rabbits were inoculated by the anterior chamber of the eye with virulent mammalian tubercle bacilli. Two weeks later two cubic centimetres of the prepared serum were injected subcutaneously, and this amount was repeated every week for four weeks. At the end of this period the affected eyes were acutely inflamed, the iris in some cases looking like granulation tissue. After the injections ceased this condition of intense inflammation improved, and a month later the pupils were distinct and the redness had disappeared from the iris, scattered over which a few yellowish specks could be seen. For five or six weeks the eyes remained in this condition, there being no apparent increase in size or number of the yellowish specks situated on the iris. The injections of serum were then begun again, the dose being two cubic centimetres, and repeated weekly for three weeks. As a result of this the nodules on the iris increased in size, but there was no development of any fresh foci. Six months from the injection of the mammalian tubercle into the eyes, the animals were killed. On examination the bodies were found to be well nourished, and, except for the tubercles in the eyes, the animals were free from tuberculous infection.

The results of these injections show, says the author, that the serum when injected into a tuberculous animal tends to limit the extension of tuberculosis to parts other than those primarily involved, as is shown by the absence of any tuberculous disease in the internal organs. Even in parts where the disease has become established before the serum is introduced it has a pernicious influence, as in none of the infected eyes did the tubercles exceed seven in number, although two cubic centimetres of an opaque watery suspension of virulent mammalian tubercle bacilli had been injected and six months had elapsed between the primary inoculation and the death by killing of the animals. The intense inflammation in the eyes during the period of the first series of injections of the serum, followed by a period of quiescence of the tuberculosis after their cessation, and again the increase in the size of the tubercles during the second series of injections, leads one to the opinion, continues Mr. Paterson, that the serum when injected into an animal suffering from tuberculous disease aggravates the affection so long as the injections are continued; but when time has been given for this serum to influence the fluids of the body these fluids are able to a certain extent to prevent any further extension of the disease. If this is so, it would be possible to render susceptible animals immune to the action of the tubercle bacillus by injecting a quantity of this prepared serum and allowing some time to elapse before exposing the animals to tuberculous infection. Hence he endeavored to make guinea-pigs and rabbits immune to the action of the mammalian tubercle bacillus. The animals were injected subcutaneously with doses of two cubic centimetres of the prepared serum, and the dose was repeated every third day until five injections had been given and they had received a total of ten cubic centimetres of serum. These injections were followed by the usual rise of temperature, swellings, and emaciation, but after their administration had been stopped these symptoms gradually disappeared. One month from the date of the last injection of the serum virulent mammalian tubercle bacilli in watery suspension were injected into the anterior chamber of the eye of a number of rabbits. This injection gave rise to an acute iritis accompanied by opacity of the cornea. These symptoms continued for a few weeks and then gradually diminished, so that by the end of the sixth week they had completely disappeared and no trace of tubercle could be found in any part of the body on making a post-mortem examination. Two months later—that is, three months from the date of the last injection of serum—a cubic centimetre of an opaque watery suspension of virulent mammalian tubercle was injected into the peritoneal cavity of a number of guinea-pigs. After this injection the animals appeared to remain in their usual health and were all killed in from two months to two months and a half after the introduction of the mammalian tubercle. During this period there was no emaciation, as shown by the absence of loss of weight. On post-mortem examination the only evidences of any injection of irritant matter having been made into the peritoneal cavity was in one case an adhesion of the liver to the diaphragm and in another the presence of three small nodules, about half a millimetre in diameter, in the edge of the omentum, which otherwise was normal. All the viscera were perfectly healthy and free from any trace of tubercle even on microscopical examination. Sections of the nodules showed that they consisted of a dense, fibrous capsule inclosing amorphous matter, calcium salts, and fat globules of various sizes. In none of the sections was there any evidence of an active process, and careful examination failed to reveal the presence of tubercle bacilli. The existence of these nodules, says Mr. Paterson, may have had nothing to do with the injection of the tubercle bacilli; but from their structure it is highly probable that they were the result of the inoculation, though the bacilli had disappeared. Five months after the injection of the serum a number of the remaining animals had virulent mammalian tubercle injected into the subcutaneous tissues, while in others the same organism was introduced into the peritoneal cavity. The subcutaneous injections acted in the same manner as injections of dead bacilli in the same situations—that is to say, a caseous mass formed which was discharged without giving rise to any infection of lymphatic glands or viscera. The injections into the peritoneal cavity disappeared without leaving a trace.

How long this acquired immunity will last in animals it is impossible at present, the author says, to say definitely, but the results of the last set of experiments recorded show that it is effectual for a least five months. Having obtained the serum of fowls in such a condition that its injection into such susceptible animals as guinea-pigs and rabbits conferred immunity against the invasion of large numbers of mammalian tubercle in a virulent form, he tried its effects on himself and injected the serum into his thigh. During the whole of the period covering the experiment the femoral glands remained enlarged though painless, and this condition persisted for six weeks from the date of injection. A full account of the experiment is given by Mr. Paterson, who says that the experiment in man can not be pushed to the test of injecting into his body virulent mammalian tubercle bacilli after the injection of the serum. He feels justified, however, in concluding that if such susceptible animals as guinea-pigs and rabbits are rendered immune by this method against the invasion of large doses of the virulent bacillus introduced into their bodies, man, who is much less susceptible, may in the same manner be rendered immune against the invasion of the few bacilli which may at any one time attack him. Mr. Paterson states that he believes this condition of immunity can be attained in man by beginning with an injection of two cubic centimetres of the serum, and increasing each administration by a cubic centimetre until its influence on the body is shown by a distinct rise of temperature. At least a week should intervene between the injections.

The length of time this immunity so acquired will last can only be definitely ascertained by observations in a large number of cases and extending over a number of years, he says; but, even if the immunity should be found to diminish or disappear after the lapse of a number of years, this does not reduce the value of the serum as a prophylactic, because the injections can be repeated at stated intervals and the immunity re-established.

Mr. Paterson does not allege any curative effects from the use of the serum in patients with tuberculous disease, but he maintains most emphatically that, when it is injected into susceptible bodies, it confers an immunity against the invasion of the bacillus of mammalian tubercle. He especially recommends these injections to be given to persons who have a tuberculous tendency and to those who have a history of tuberculous disease among their relatives. By this means it is possible, he thinks, to diminish, if not altogether to eradicate, tuberculous affections from the race.

The Principles of Treatment in Puerperal Eclampsia.—The November number of the *American Journal of Obstetrics* devotes considerable space to an article on this subject by Dr. William Warren Potter, of Buffalo, of which the following is the substance: The treatment of eclampsia may be classified as preventive and curative. The preventive treatment may be subdivided into medicinal and hygienic, and the curative into medicinal and obstetric. If the prodromes and the physical signs, says the author, are recognized early, it is reasonable to expect that hygiene and medicine will correct the errors that are so rapidly tending toward eclampsia. Air, food, and drink must be supplied in ample quantities and of good quality; exercise, active or passive, such as walking, driving, light calisthenics, or massage, must be insisted upon.

In order to limit the source of toxines and to promote their elimination one of the surest ways is to place the woman upon an exclusive milk diet. Water, too, should be freely given in definite quantities and at regular intervals. Dr. Potter states that distilled water is one of the best diuretics that can be administered to a woman in the eclamptic state. Two quarts a day is not too much, he says, and it may be given still or sparkling. It dilutes the toxines and hastens their exit from the organism.

Constipation also must be prevented, intestinal toxines eliminated, and the intestinal tract kept free. Potassium salts, he thinks, should be avoided, as they favor the production of the intestinal toxines and tend to diminish the red blood-corpuscles, an element that must be conserved. Two other remedies are mentioned by the author as belonging to the therapeutics of the pre-eclamptic condition—bloodletting and nitroglycerin. If, he says, there is a full artery at the wrist, with a tendency to cyanosis in the pre-eclamptic stage, venesection may be resorted to, and possibly it will be beneficial. One good, full bleeding is permissible, but it should be used with caution in repetition. Its employment, however, is to be feared during an eclamptic seizure. If there is high arterial tension—vasomotor spasm—nitroglycerin in full doses is a valuable remedy. It combats this condition without depleting the patient, and helps to set the kidneys to work.

Concerning the treatment of true eclampsia, continues Dr. Potter, it will be, first, medicinal and, second, obstetric. The first indication in ante-partum eclampsia is to control the convulsions, and for this it is better to administer chloral by the rectum; chloroform, the author says, should be administered rather tentatively in these cases. If the convulsions are not promptly controlled or diminished in frequency or severity by its vigorous and skillful administration he advises emptying the uterus at once of its contents, as he is convinced that a prompt evacuation of the uterus constitutes the most important means of dealing with eclampsia. Several methods, he says, are recommended, but in ante-partum eclampsia dilatation, first practised with steel dilators, if necessary, then with manual stretching of the os and cervix, will accomplish the work to the best advantage. Exceptionally, however, extreme measures may become necessary, but only rarely can the deep incisions of Dührssen be required. Cæsarean section, also, should be reserved for extreme complications. In ante-partum eclampsia, after obtaining complete dilatation, it is well to terminate labor at once with the forceps, the patient being under profound anæsthesia.

In post-partum eclampsia, continues the author, the treatment must be medicinal. Veratrum viride should be avoided, as it is dangerous, uncertain, and deceptive in its action. It reduces arterial tension and cardiac pressure without exercising any special influence over the progress of the malady. Bloodletting, for similar reasons, should be carefully employed and limited to the few cases of the ante-partum variety with a plethoric habit and cyanosis.

Dr. Potter calls attention to a variety of eclampsia, namely, that of pregnancy as distinguished from eclampsia appearing just before, during, or after delivery, which, he says, though representing the most dangerous variety, nevertheless is one in which there is more time for deliberate action. It is here, too, that medicinal treatment offers better promise, and the question of evacuating the uterus may be deferred until the other plan manifests failure or inadequacy. The induction of premature labor may be tried in these cases, he continues. In a few hours labor will set in and can then be terminated rapidly if occasion should so demand. To promote the elimination of toxic material, the value of diuresis, catharsis, and diaphoresis should not be forgotten; the hot-air bath and the hot pack also should not be overlooked, although, he adds, these are impracticable during the convulsions.

Dr. Potter states that his object is to present practical experience and to advocate principles which he groups under the following heads:

1. Though the pathogenesis of eclampsia is unsettled, it belongs solely to the pregnant or puerperal state. It is not apoplectic, epileptic, or hysterical in character.

2. It depends upon toxæmia due to overproduction of toxines and under-elimination by the emunctories.

3. These toxines probably have their origin in the ingesta, in intestinal putrefaction, in fœtal metabolism—one or all—and there is coexisting sluggishness, impairment, or suspension of elimination.

4. When the prodromes of eclampsia appear, the kidney should be interrogated as to its functions and all symptoms carefully watched.

5. Treatment is (*a*) preventive and (*b*) curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric.

6. Milk diet and distilled water should be given in the pre-eclamptic state to dilute the poison, hasten its elimination, and nourish the patient.

7. Bloodletting should be employed only in plethora or cyanosis. It is apt to cause anæmia if persisted in or repeated, whereas red blood-corpuscles must be conserved, not wasted. Nitroglycerin diminishes vasomotor spasm, hence it may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control convulsions.

8. Eclampsia is the expression of a further maternal intolerance of the fœtus; hence, as a primal measure, the uterus should be speedily emptied of its contents.

9. Medicinal treatment alone is delusive, and when relied upon exclusively is fraught with danger both maternal and fœtal, whereas in the prompt induction of labor is found a rational application of science to a desperate condition.

10. Finally, it furnishes, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxæmic disease of high death rate.

The Æsculapian Society of the Wabash Valley, said to be the oldest medical society in Illinois, celebrated its fiftieth anniversary on October 28th in Paris. In the evening the local physicians gave a banquet. About seventy-five members of the profession were in attendance. The society has been in existence fifty-one years. It was organized in 1846, but, as it did not receive its charter till 1847, fifty years from that date was celebrated as the semicentennial anniversary. We learn that the society is in a most flourishing condition.

Original Communications.

THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.

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(*Continued from page 382.*)

To the second group (subdivided into two groups—cytochrome and caryochrome) belong those cells in which in Nissl preparations the nucleus is most in evidence; the nucleus has a clear contour, but only indications, as it were, of the cell body are present, an appearance due either to scanty development of the cell body or to the predominance in it of the unstainable substance. These cells often look as if they were naked nuclei, though by Golgi's method it can be shown that they may possess definite axones and dendrites. In some of these cells the stainable substance may be present, though when it is it is very unevenly distributed, being collected at definite points in the cell, the nucleus apparently being only partly surrounded by protoplasm. Such cells are to be seen in the substantia gelatinosa of Rolando. Nissl suggests that the nerve cells with an illy developed cell body, in which the nucleus appears to be incompletely surrounded and does not exceed in size the nucleus of a neuroglia cell or of an ordinary leucocyte, be called "*granules*" (*Körner*) or *cytochrome* nerve cells. These cells are present in great numbers in the granular layer of the cerebellum. There are different varieties of these cytochrome cells, those in the cerebral cortex, those in the cerebellar cortex, and those in the olfactory bulb, for example, being by no means identical.

The second subgroup of cells in which the cell body is only indicated, but in which the stained nucleus is of the size of that of an ordinary nerve cell, or at any rate is larger than that of a neuroglia cell, Nissl calls *karyochrome* nerve cells. Of these there are, further, distinct varieties—for example, those of the substantia gelatinosa of the spinal cord, and those of the ganglion habenulæ—types which for the present are designated simply by letters of the Greek alphabet.

The majority of the nerve cells, however, fall in the first group—that of the *somatochrome* cells—where the cell body is morphologically apparently much more important relatively than the nucleus. But this group contains a series of types of nerve cells which are distinguishable from one another in part through differences in the nuclei, but mainly through different relations of the stainable and unstainable constituents of the cell body. Nissl divides the somatochrome cells into four great groups: the *arkyochrome*, the *stichochrome*, the *arkyostichochrome*, and the *gryochrome* nerve cells. In the arkyochrome nerve cells the stainable portion of the cell body appears in Nissl preparations in the form of a network (ἄρκυς). The branches of this network appear to be distinctly connected, but Nissl notes that in many of the cells in this group there can be made out processes into which the distinct network of the perinuclear part of the cell body can go over, so as to form a parallel-striped arrangement. As a sample of cells belonging to this group, Nissl pictures an arkyochrome olfactory cell (Fig. 52). Among the arkyochrome nerve cells, Nissl further distinguishes *enarkyochrome* forms from *ampharkyochrome* forms. The former show the stained constituent arranged in the form of a network which differs from the network in the ampharkyochrome cells, in which the intensely stained radiating nodal points of the network are connected in the cell body by deeply stained very thick bridges, so that a further connected network of very deeply stainable substance is observable. Both enarkyochrome and ampharkyochrome cells are, according to Nissl, widely distributed throughout the central nervous system. The former occur in the spinal cord, but are most numerous in the large dorsal nucleus at the proximal end of the medulla (Fig. 50).

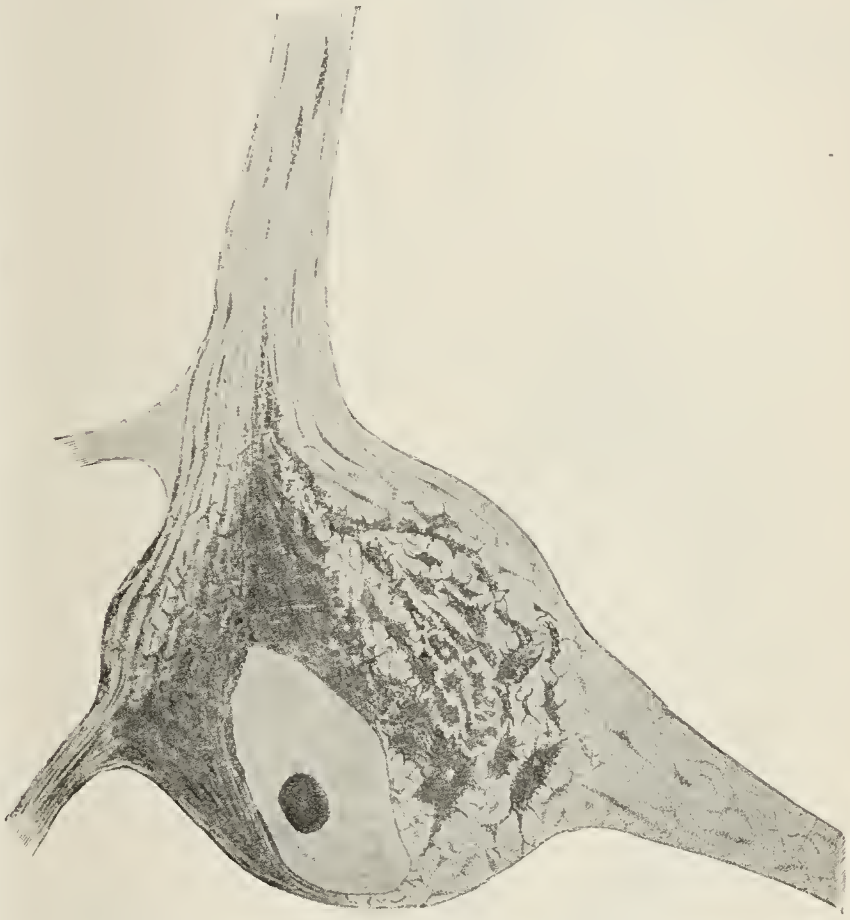

Fig. 49.—Motor nerve cell from ventral horn of gray matter of spinal cord of rabbit. (After Nissl.) Of the three lower processes, the middle one represents the axone. All the other processes are dendrites. The margins of the cells and of the masses of stainable substance appear too sharp in the reproduction. At the angle of division of the large dendrite at the left superior angle of the cell is shown one of the "wedges of division" (*Verzweigungskegeln*). The spindle-shaped Nissl bodies are well shown, especially in the dendrites. This cell is classed by Nissl as a stichochrome nerve cell in the apyknomorphous condition.

In the second main group of somatochrome nerve cells, the stichochrome cells (στίχος), the stainable substance is arranged in the form of striæ which run in the same direction and usually parallel with the contour of the cell body, in part also with the surface of the nucleus. These striæ, as a rule, are not continuous fibrils, but the striated arrangement is dependent in the main upon different stained elements, threads, spindles, and granules, more or less isolated and in rows. These various elements, without being directly continuous, arrange themselves in rows running in the same direction within the cell body. Occasionally, in this group of nerve cells, there occur examples in which here and there a thread or a row of granules assumes a direction opposite to that of the general striation, an appearance, however, which would not prevent the cell from being included in this category. So far, Nissl has distinguished four types of stichochrome cells, represented by the nerve cells of motor nuclei (Fig. 49), the large cells of Ammon's horn (Fig. 53), certain cells of the cerebral cortex, and spinal ganglion cells (Fig. 51).

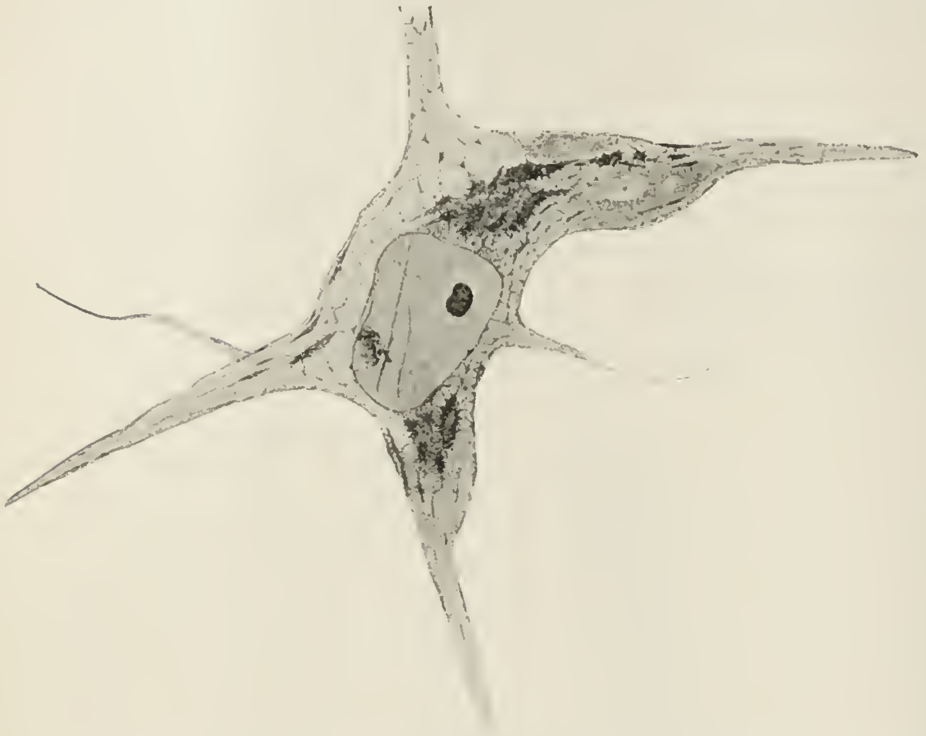

Fig. 50.—Nerve cell from dorsal nucleus of proximal portion of medulla of rabbit. (After Nissl.) Somatochrome nerve cell of enarkyochrome type in apyknomorphous condition.

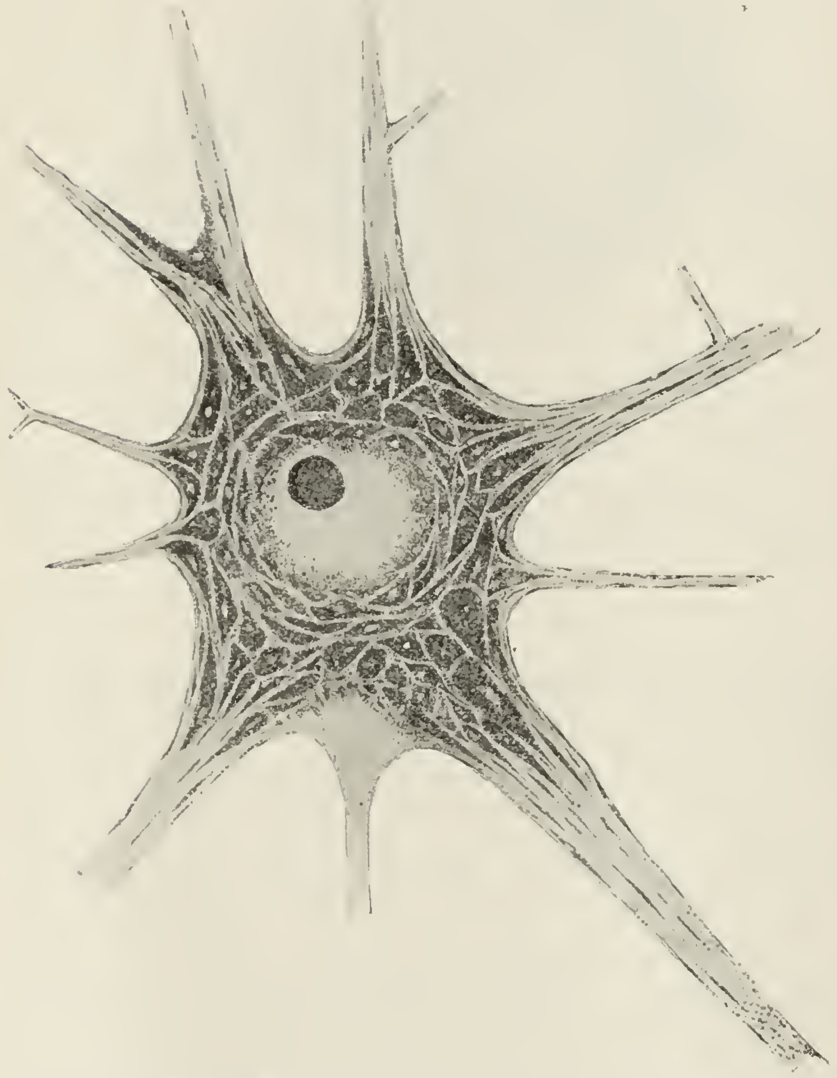

Fig. 51.—Nerve cell from ganglion on dorsal root of a cervical nerve of a rabbit. (After Nissl.) Stichochrome nerve cell in apyknomorphous condition. Two large nucleoli are shown within the nucleus. The axone at the upper end of the cell is seen to contain none of the stainable substance of Nissl.

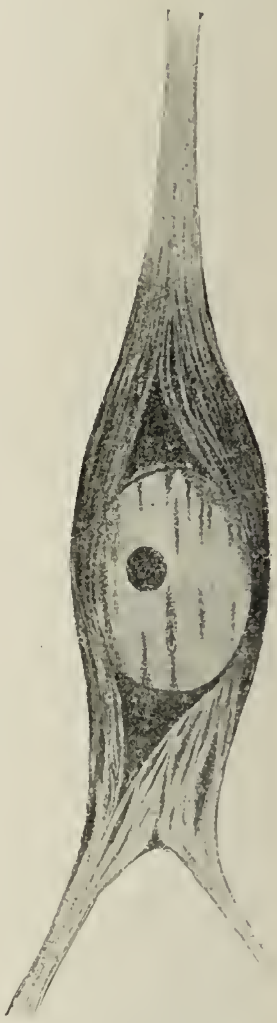

Fig. 52.—Nerve cell from olfactory bulb of rabbit. (After Nissl.) Somatochrome nerve cell of the arkyochrome variety in the parapyknomorphous condition.

The third group of somatochrome nerve cells includes those of the so-called arkyostichochrome type, in which the striated is united with a networklike structural character in the most intimate manner, so that one can not decide which mode of arrangement of the stainable substance is most characteristic of the cell. Nissl cites as a typical example of cells of this sort the Purkinje cells of the cerebellar cortex (Fig. 54).

Lastly, as a fourth group of somatochrome nerve cells, Nissl describes the gryochrome (γρῦ) type, in which the stainable constituent of the cell body is entirely made up of small granules. The granules are not distributed, however, at random in the cell body, but tend to form threads or heaps, so that a distinct habitus can be attained. Nissl does not give pictures of cells of this type, but mentions that they are particularly, though not exclusively, found in the corpus striatum.

The whole series of types as revealed by his method may be classified therefore as follows:

Group I. Somatochrome Nerve Cells.—Cells in which the cytoplasm surrounds the nucleus completely and exhibits a distinct contour.

- A. *Arkyochrome nerve cells.* The stainable substance in the cytoplasm appears to be arranged in the form of a network.
  1. Type of enarkyochrome nerve cells.
  2. Type of ampharkyochrome nerve cells.
  3. Type of arkyochrome olfactory nerve cells, etc.
- B. *Stichochrome nerve cells.* The stainable substance in the cytoplasm is arranged in the form of stripes running in a similar direction.
  1. Type of motor nerve cells.

   2. Type of large stichochrome cells of Ammon's horn.
   3. Type of stichochrome cells seen in the cerebral cortex.
   4. Type of nerve cells in the spinal ganglia, etc.

C. *Arkyostichochrome nerve cells.* Of these, up to the present, only one type has been distinguished.
   1. Type of Purkinje cells of the cerebellar cortex.

D. *Gryochrome nerve cells.*

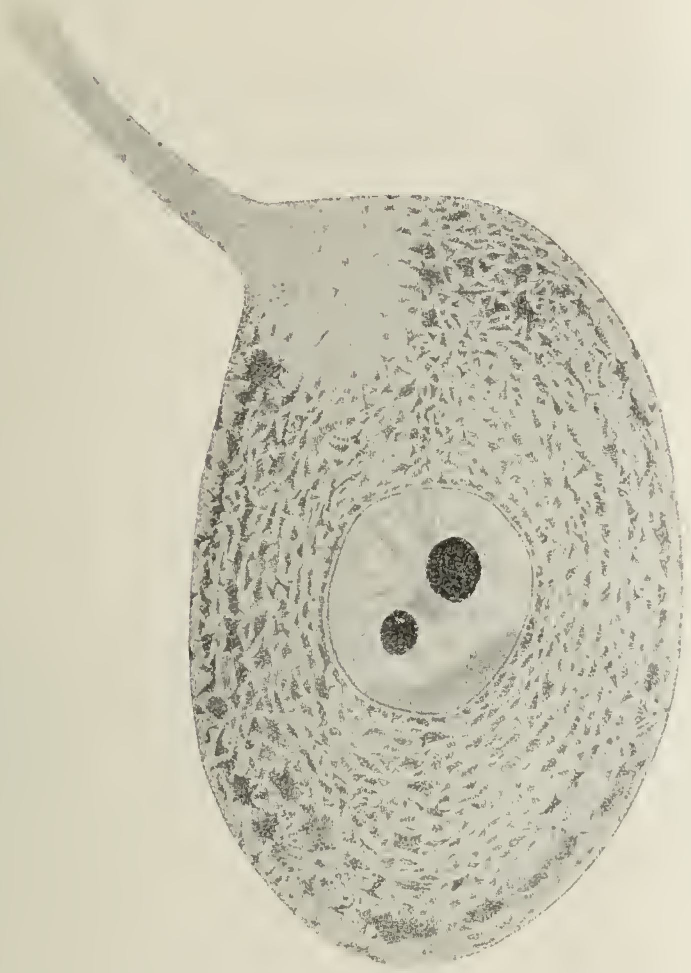

Fig. 53.—Large cell from Ammon's horn of rabbit. (After Nissl.) Somatochrome nerve cell of stichochrome variety in the pyknomorphous condition.

Group II. All Nerve Cells not falling in Group I.

A. *Cytochrome nerve cells.* Only traces of a cell body are present. The nucleus is of the size of the nuclei of ordinary leucocytes.
   1. Cytochrome cells of Type α.
   2. Cytochrome cells of Type β, etc.

B. *Karyochrome nerve cells.* Only traces of a cell body are present. The nucleus is of the size of ordinary nerve-cell nuclei, and is in every case larger than the nuclei of the glia cells.
   1. Karyochrome cells of Type α.
   2. Karyochrome cells of Type β, etc.

It is Nissl's belief that this classification will, without being forced, include all nerve cells which can be found, although it is not impossible that further study may reveal forms which will necessitate an extension of the number of types. He lays stress upon the fact that between the single types transitional forms exist, sometimes rendering classification difficult. Benda has urged this fact as an argument against the existence of definite types, but without, as it would seem, any sufficient proof. The justification of the classification does not rest solely upon the establishment of the existence of the single types of cell structure, but is based largely upon the circumstance that cells of a wholly definite structure are situated throughout the animal series always in homologous localities. Benda has vigorously opposed this view, but his arguments have, I think, been satisfactorily answered. Any one who will take the trouble to stain nerve cells in different regions in different animals will be able to convince himself not only of the existence of definite types, but of their predominance in certain localities,, and I can give no better advice to the beginner and to the doubting than that he study the regions suggested by Nissl in this connection—namely, the ventral and dorsal horns of the cord, the ganglion cell groups in the thalamus of rodents, in the corpus mamillare, in the pons, in the red nucleus, and in the nucleus of Deiters. This elaborate nomenclature recommended by Nissl must not, however, be regarded as a permanent and satisfactory method of designating the varieties of nerve cells. On the contrary, it must be looked upon only as a temporary expedient. If, as is to be suspected, too much stress has been laid by Nissl upon the importance of his "stainable substance," which we now have some reason to believe represents only a portion of the supply of food stuffs in the nerve cell, such a classification can scarcely hope to stand the test of time. It would be as though an architect should attempt to classify houses according to their pantries and cellars, or an anthropologist to group men as types according to the contents of their stomachs and intestines—methods of cataloguing useful enough at times, perhaps, but scarcely to be looked upon as ideal or permanent.

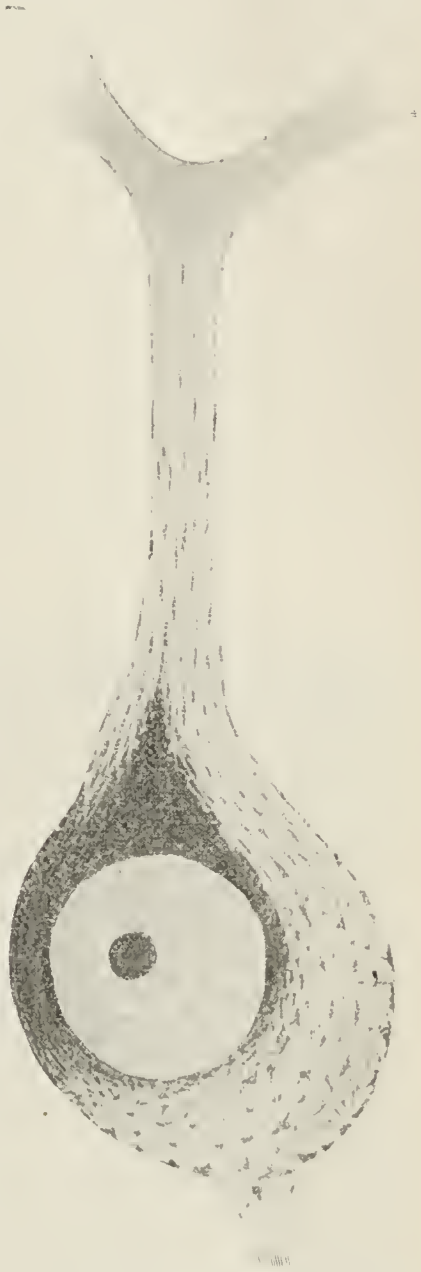

Fig. 54.—Purkinje cell from the cerebellar cortex of the rabbit. (After Nissl.) Somatochrome nerve cell of the arkyostichochrome variety in the apyknomorphous condition.

Nissl early pointed out that the single types of nerve cells may under certain circumstances show different staining relations;[*] the individual members of a given group of cells belonging to one type may be palely, moderately, or intensely stained. These differences appear to depend upon the concentration of the stainable substance in the cell body. Nissl consequently designates the extremely darkly stained cells as *pyknomorphous* cells, or cells in which the stainable portions are arranged relatively closest (πυκνός), while the very feebly stained cells he names *apyknomorphous*—that is, cells in which it is characteristic of the staining that the stainable masses are not arranged close to one another, but are tolerably widely separated by the non-stainable constituents of the cell body. Intermediate stages Nissl groups as *parapyknomorphous*. Flesch[*] described these appearances, speaking of *chromophilic* cells and *chromophobic* cells as well as transition forms, and attributed the differences to variations in the internal chemistry of the cells, which depended in part, he thought, upon differences in the development, in part upon differences in metabolism or of function. His view has not met with general acceptance.

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[*] *Allgem. Ztsch. f. Psych.*, Bd. I.

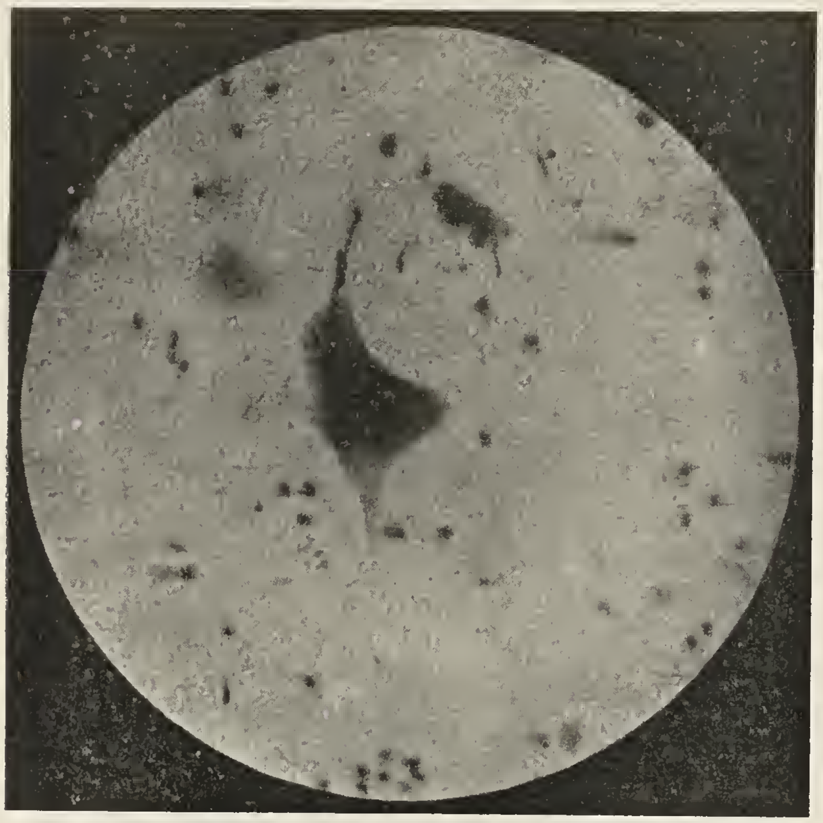

FIG. 55.—Nerve cell from the spinal cord of the dog in the so-called "chromophile" condition. This appearance is at least in the majority of instances an artifact due to the action of the reagents employed. The axone here, as in other nerve cells, appears to be free from the stainable substance.

Nissl goes further, and mentions that not infrequently the nucleus shows modifications which correspond in greater or less degree to the intensity of staining of the cell body—for example, in the apyknomorphous cells the unstained nuclear juice is relatively more abundant than in the pyknomorphous examples, in which, as a rule, the nuclear framework and the stainable parts of the nucleus generally are relatively more abundant. This holds, he asserts, not only for the somatochrome cells, but also, though in less degree, for the karyochrome and cytochrome cells.

A curious and puzzling phenomenon is met with in the so-called *chromophile*[*] nerve cells (Fig. 55). One sees often, along with the other nerve cells, single cells or small groups of cells in which the stainable substance appears to be evenly diffused throughout the cell body, so that it is impossible to distinguish a stainable from an unstainable constituent in the cell. The explanation of these forms is as yet not entirely satisfactory. Nissl points out that they are always relatively smaller than pyknomorphous cells. It is nearly always possible to make out in alcohol preparations, as I have had many opportunities of observing, that at the periphery of the sections chromophile cells tend to be abundant, and there is no doubt, in my mind at least, that the majority of these correspond to the well-known artifacts which are so common in the periphery of tissues hardened in alcohol. But the chromophile cells are not entirely confined to the periphery of the sections; they may occur singly or in little groups in almost any portion of the tissue; it has seemed to me, however, that even then they are more abundant in the neighborhood of the blood-vessels or larger tissue interspaces, and it is not impossible that in these situations they may represent artifacts due to the action of the alcohol. Nissl himself does not seem entirely clear as to their nature, but has recently expressed himself as of the opinion that they are in large part due to the action of reagents employed, although he does not deny that under certain circumstances they

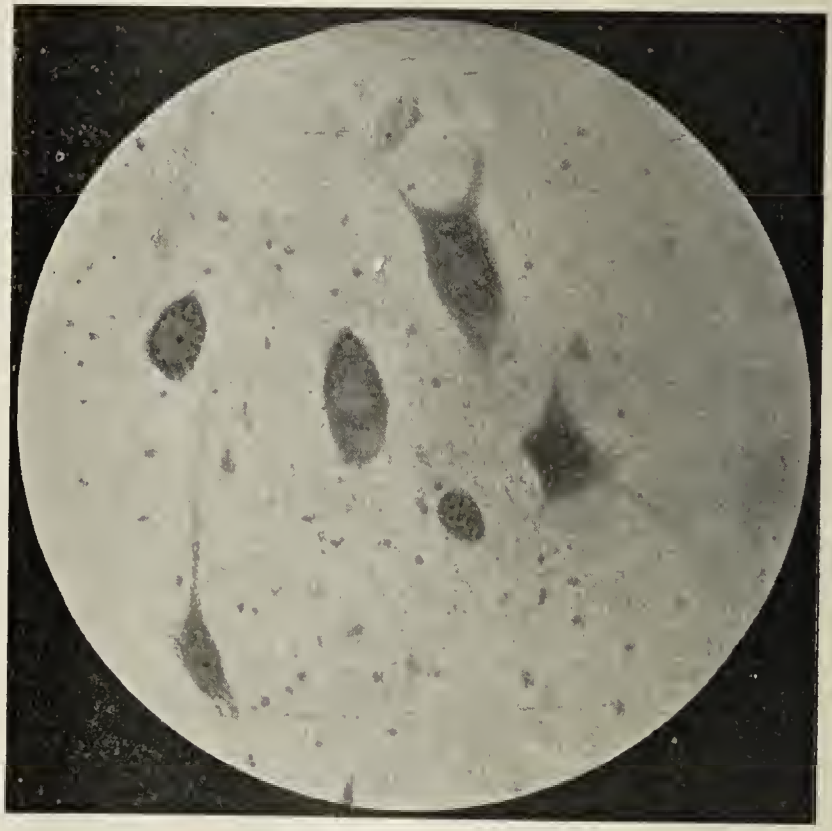

FIG. 56.—Group of nerve cells from lateral horn of gray matter of cervical cord of dog. Stained by Held's modification of Nissl's method. In two of the cells the axones and axone hillocks are clearly shown.

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[*] *Ueber die Verschiedenheiten im chemischen Verhalten der Nervenzellen.* Mittheil. der Naturforsch. Gesellsch. in Bern aus dem Jahre 1887, Nr. 1169–1194, S. 192–199. Bern, P. Haller, 1888.

[*] The word *chromophile* is here used in the sense in which Nissl employs the term *Chromophilie* (Nissl, *Allgem. Ztsch. f. Psych.*, 1896, Bd. lii, S. 8). Whether or not this is the sense in which the word is employed by Flesch and his pupils is not clear.

may have a pathological significance. For the present, however, inasmuch as they vary so markedly in appearance and localization that no normal can be established for them, he suggests that in the study of pathological alterations only those observations are of value which we know for certain have been made upon cells which are not chromophile cells. A further study of these appearances is urgently needed, and it is to be hoped that ere long we shall have a clearer conception regarding their significance.

In Figs. 56, 57, and 58 are shown a number of nerve cells from the spinal cord and ganglia of the dorsal roots of the spinal nerves of a dog. The excellent photographs which Dr. A. G. Hoen has kindly made for me show very well the appearances to be made out under relatively low powers. These reproductions made from unretouched photographs have at least the merit of representing accurately what can be seen in a single optical section.

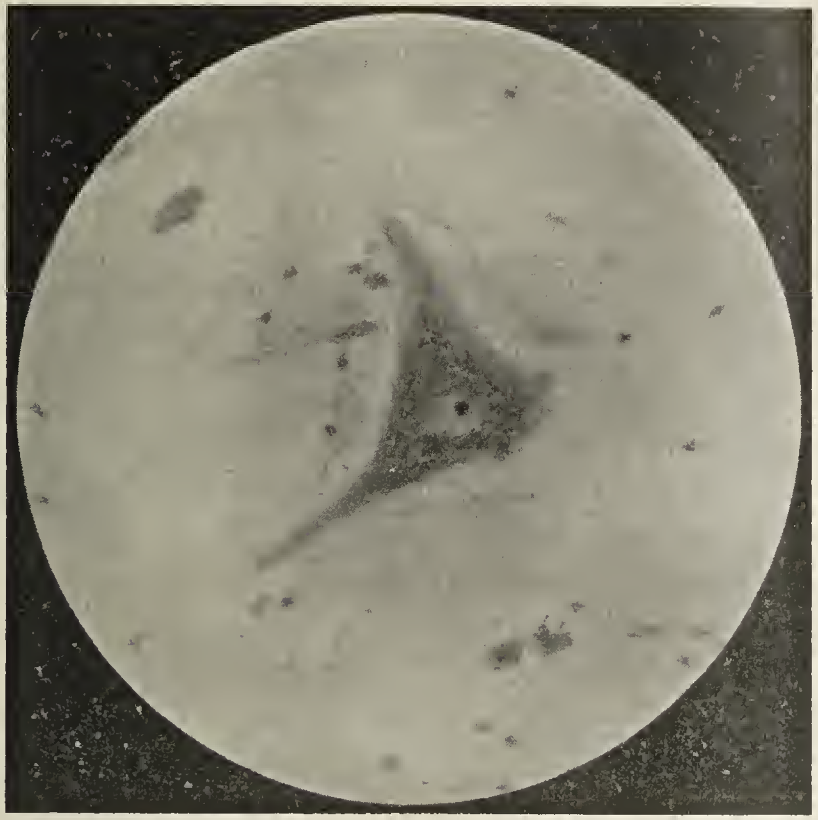

Fig. 57.—Motor nerve cell from the ventral horn of the gray matter of the spinal cord of the dog. Stained by Held's modification of Nissl's method. The Nissl bodies are distinctly visible in the protoplasm of the cell body, and especially in the dendrites. The axone is not shown. The borders of the nucleus are indistinct, owing to overlying cytoplasm, but the single, deeply stained nucleolus is very evident.

In medicine, as in theology and philosophy, the subjects which are most interesting and most discussed are those about which we know least, and it is not surprising, therefore, considering the scantiness of our knowledge, that the nature of these stainable portions of the substance of which the cell body is made up should have been the subject of much polemical writing. Indeed, between Nissl on the one hand and Rosin and Benda on the other (the two latter not being, however, entirely in agreement), a battle royal has been carried on in a series of articles in which too often personalities, tiresome to read and unworthy of the disputants, have been permitted to enter. Nissl has taken the ground that for the present, at least, we have no right whatever to make any positive statement regarding the chemical nature of these substances; he urges that for the time being we must remain content with a description of the morphological appearances met with in the specimens. His terms, "visible formed substance" and "organized substance," as applied to the stained portions of the cell body, introduced with the idea that they are purely objective, are in reality not so, and are, therefore, objectionable. To the term "stainable," if by this is meant "stainable by Nissl's method," there can be no objection. Rosin,* whose studies were made largely with the triacid stain and with Ehrlich's triple stain, and having in mind the principles of elective staining formulated by Ehrlich, compares the granules within the nerve cells—that is, the stainable substance of Nissl—with the basophile granules of the *Mastzellen* of Ehrlich, and concludes from his studies that the granule in the nerve cell is to be thought of more in a chemical than in a morphological sense. Benda, as regards the general significance of staining reactions, supports Rosin. Nissl has opposed Rosin's view, and has urged, first, that not all basic dyes will stain the substances concerned, and secondly, that certain acid dyes will stain them intensely, objections which he believes upset entirely Rosin's view based on Ehrlich's color theory. It is certain that basic dyes, like methylene blue and thionin, stain very beautifully the Nissl bodies; indeed, the method of Nissl depends upon this quality; but Nissl contends that the term *Basophilie* should be used only in the sense in which it has been previously defined by Ehrlich, in

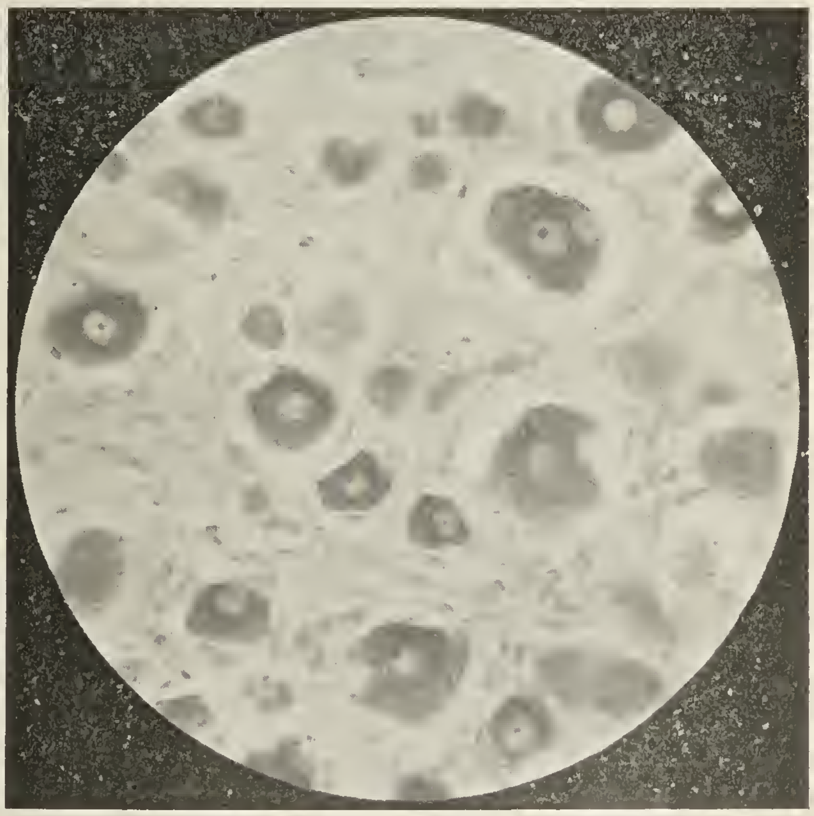

Fig. 58.—Group of cells from the ganglion on the dorsal root of a spinal nerve of the dog. Stained by Held's modification of the method of Nissl.

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* Rosin, H. Ueber eine neue Färbungsmethode des gesammten Nervensystems nebst Bemerkungen über Ganglienzellen und Gliazellen *Neurol. Centralblatt*, 1893, S. 803. Also, Entgegnung auf Nissl's Bemerkungen. *Neurol. Centralblatt*, 1894, S. 210.

which event it is improper, he thinks, to apply it to the stainable substance of nerve cells. Rosin separates the "granules" in nerve cells from other basophile cell substances on account of their behavior toward the triacid mixture;[*] and Benda inclines to the view that the granules in the nerve cells approach nearest in character to the δ-granules of Ehrlich. He asserts that in numerous experiments with his method (formol freezing) he has found in the most different organs constituents of the cell body which behave not only tinctorially, but also morphologically, exactly as the stainable substances in nerve cells. He described them in gland cells, liver cells, in cells of the pancreas, in the cells of some sarcomatous tumors, in certain connective-tissue cells, but especially in normal and pathological lymph glands. Cajal[†] also asserts that the stainable substance of Nissl is not specific for the nerve cells, as he has demonstrated its presence in certain of the leucocytes and of the connective-tissue elements.

A flood of light has been thrown upon this portion of our subject through the recent researches of Hans Held.[‡] Held has studied the structure of nerve cells of different animals in a large number of different regions with a modification of Nissl's method, which he has himself devised.

His modification, which I have used myself and of which I can speak in the highest terms, is as follows: The tissues are imbedded in paraffin, notwithstanding Nissl's objection that imbedding injures the nerve-cell structure. Held has found, and I can confirm his statement, that with careful paraffin imbedding no more artefacts are produced than when no imbedding at all is employed. On the contrary, it is possible with paraffin to obtain sections as thin as one micron, or even thinner, whereas sections prepared by Nissl's method are seldom thinner than from seven to eight microns, and it is by virtue of the possibility of obtaining thin sections that much of the increase in our knowledge of the nature of the stainable substances inside the cell has resulted. In order to study ordinary pathological alterations in the cells, however, sections from six to twelve microns in thickness afford the most satisfactory results. Held fastens the paraffin section on the slide with dilute alcohol; the staining fluid consists of equal parts of Nissl's solution of methylene blue and soap and a five-per-cent. aqueous solution of acetone. The sections are heated in this mixture until all smell of acetone has disappeared. (Held stains first with a solution of erythrosin, the erythrosin serving to bring out the other constituents of the cell body, the non-stainable substance of Nissl, but for the study of the Nissl bodies alone this portion of his method can be dispensed with.) The sections, after staining, are allowed to remain in the blue solution until it has cooled, and are then differentiated in a one tenth-of-one-per-cent. solution of alum for from a few seconds to a few minutes, according to the thickness of the section. The specimens are then washed in water, dehydrated quickly in absolute alcohol, cleared in xylol, and mounted in benzine-colophonium. Held used as a fixing agent sometimes ninety-six per cent. alcohol and sometimes picrosulphuric acid, as the latter shrinks the protoplasm less. In using this fixing agent, however, very small pieces must be employed, as it penetrates with difficulty.

Another excellent modification of Nissl's method is that of Mann, of Edinburgh.[*] Sections of sublimate tissues are stained with a concentrated aqueous solution of toluidin blue. They are then differentiated, and may be counter-stained if desired.

(To be continued.)

ANOTHER CASE OF CONGENITAL HYPERTROPHY AND STENOSIS OF THE PYLORUS.

BY F. SCHWYZER, M. D.

IN the *New York Medical Journal* for November 21, 1896, I called attention to a case of congenital hypertrophy and stenosis of the pylorus. On the same day, by a strange coincidence, I made an autopsy where similar symptoms had been present, and I now feel it my duty, in the interests of the diagnostic, to publish these additional details of a disease which until now seemed rare.

Previous History.—Boy D., born October 2, 1896, second child of a healthy father and neurotic mother. Their first child died at the age of six months with dyspeptic or enteric symptoms. The boy was said to be normally developed at birth and weighed six pounds and a half. By order of the accoucheur, he was fed upon condensed milk and water. Movements were induced only by the aid of soap-and-water injections, and the fæces contained white particles of curdled milk and often mucus. Still no physician was consulted until October 30th, when I was called, as upon that day the child vomited frequently.

Status I.—I found a small, somewhat atrophic child. There was nothing apparently abnormal in the internal organs. The stomach was empty, the pylorus could not be felt. The movements contained whitish particles and mucus. Respiration and temperature normal; pulse, 120. I considered the disturbance dyspeptic, and ordered barley water and sterilized milk. This could not be retained, however, even when greatly diluted. The result was the same with cream and water. Stomach washing brought up much mucus; the gastric juice contained some free hydrochloric acid and showed almost no starch reaction.

The mother was so prejudiced against stomach washing and sterilized milk (her first child had received this treatment) that I did not see the little patient again until November 18th. His parents meanwhile had given him diluted malted milk. The vomiting had ceased, the diuresis had increased, but there seemed to be less assimilation of food, as the child was more emaciated. The vomiting had now begun again, and he cried after each feeding.

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[*] *Neurol. Centralblatt*, 1893, p. 808.

[†] Ramón y Cajal, S. Estructura del protoplasma nervioso. *Revista trimestral micrográfica*, vol. i, No. 1, March, 1896.

[‡] Held, H. Beiträge zur Structur der Nervenzellen und ihrer Fortsätze. *Arch. f. Anat. und Physiol.*, Anat. Abth., 1895, S. 396.

[*] Mann, G. *Jour. of Anatomy and Physiology*, vol. xxix, 1894, p. 100.

Status II.—A child in a very atrophic condition with a relatively large abdomen, stomach somewhat filled, intestines empty, liver small, spleen not discernible, no tumor to be felt in the region of the pylorus; movements induced only by injections, very sparse, but not otherwise changed. Stomach washing brought up much tenacious, glassy mucus; no free acid was found. Once the vomited matter showed distinct bile, but for which I should have diagnosticated the case with absolute assurance, hypertrophy and stenosis of the pylorus. Under the circumstances I took it to be a moderate stenosis, and owing to the weakness of the child did not urge an operation. He was kept alive for a few days by nutritive injections, and died on the evening of November 20th.

Post-mortem Examination.—The body of a child extremely atrophied, weight five pounds, abdomen somewhat dilated, abdominal walls very thin, subcutaneous and visceral fat totally wasted; heart and lungs in no way abnormal; peritonæum moist, liver small and of a dark reddish-brown color, acini not very marked; spleen, kidneys, genitals, and bladder unchanged; colon transversum and descendens much distended by gas; colon ascendens contracted; ileum containing some gas, but no fluid. Stomach very large, filling the upper third of the abdominal cavity, so distended by gas as to project beyond the left kidney, covering the spleen entirely, containing also a slimy fluid; pylorus drawn toward the porta hepatis and almost fixed by the peritoneal covering. The full stomach measures, in a straight line from fundus to the middle of the enlarged pylorus, eleven centimetres; between the same points along the larger curvature, eighteen centimetres. The wall of the left part of the fundus is very thin to about two centimetres from the end. (At this point the circumference of the fundus is about eight centimetres.) Then the stomach wall gradually thickens toward the pylorus. The pylorus is transformed into an almond-shaped tumor twenty-six millimetres long and thirteen millimetres and a half in diameter. The serosa measures 0.75 millimetre, the muscularis 3.5 millimetres, the mucosa, where not folded, 1.5 millimetre. The mucosa has longitudinal folds, the height of which is not much more than two millimetres. A millimetre-and-a-half probe can barely pass the lumen, and the pylorus seems impassable for liquids, as the five folds leave a very small lumen, which is filled with an extremely tenacious mucus. The lower part of the tumor projects into the duodenum like a portio vaginalis. The upper entrance of the pylorus is also covered with a very tenacious mucus.

Microscopical Examination.—The following sections were made: (1) Transverse cut of the pylorus; (2) longitudinal cut from the antrum pylori; (3) cuts from the wall of the fundus ventriculi. These sections of the pylorus showed: Mucosa greatly, muscularis enormously, serosa somewhat thickened; the structure of the mucosa nearly normal; the division in pars glandularis, muscularis mucosæ, and submucosa distinct; no nests of epithelial cells in the deeper layers of the mucosa; marked mucous degeneration in the glandular epithelium, between which and the subepithelial tissue are leucocytes. While muscularis mucosæ is not much thickened, the circular muscular layer of the muscularis is extremely thickened, and forms the main part of the tumor. It is composed chiefly of smooth muscle fibres and a proportionately large number of connective-tissue cells. In the antrum pylori the circular muscle layers are hypertrophic, but the longitudinal fibres also show thickening. The anatomical diagnosis is clear—hypertrophy and stenosis of the pylorus.

Similar cases previously published: Hirschsprung, two cases; Peden, one case; Pitt, one case; Finkelstein, one case; Gran, three cases; Thomson, two cases; Schwyzer, one case; De Bruyn Kops,[*] one case; W. Soltan Fenwick,[†] one case; Thomson,[‡] one case.

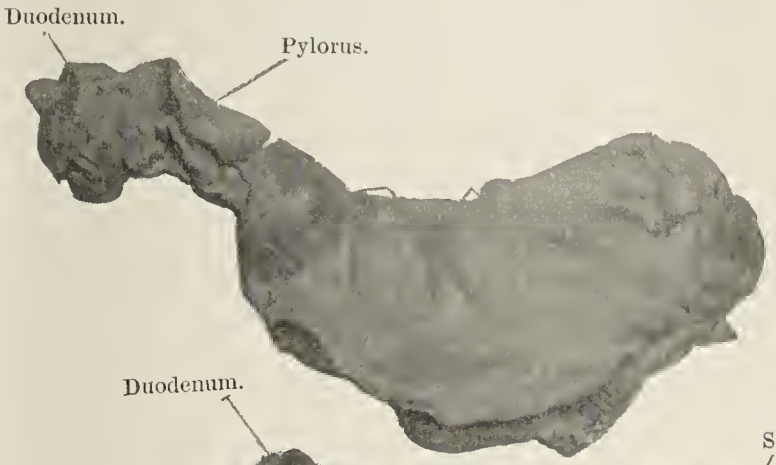

Fig. 1.

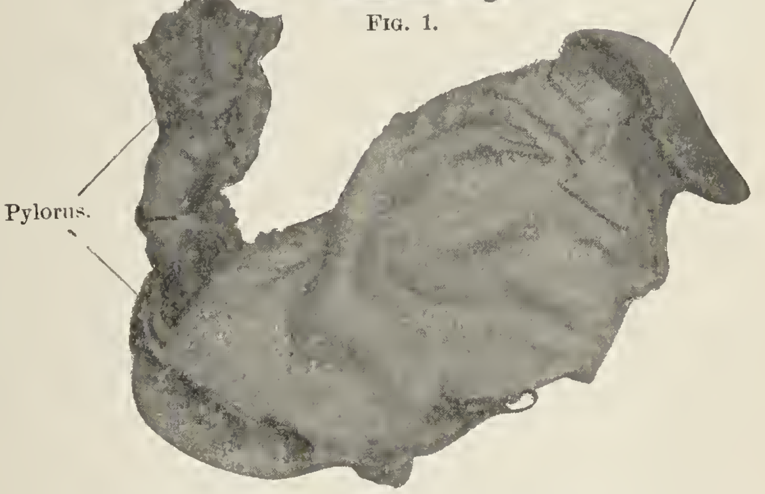

Fig. 2.

Fig. 1.—Case of H. (*N. Y. Med. Jour.*, November 21, 1896), specimen in alcohol, shrunken.
Fig. 2.—Case of D., in formalin.

Thomson, in his latest paper, gives a very good casuistic and symptomatology of the congenital hypertrophy and stenosis of the pylorus. He considers the primary cause to be a nervous disturbance leading to a spasm of the pylorus, the hypertrophy of the muscles being its natural consequence. He therefore proposes to adopt the new name of congenital gastric spasm, as the old one describes merely a secondary condition.

Some of the Anatomical Measurements of my Cases.

	First case (H——).	Second case (D——).	Normal child.
Weight at birth.............	8½ lbs.	6½ lbs.	
Fundus to pylorus...........	12 cm.	11 cm.	4–8 cm.
Curvature, major to minor....	5½–6 "	5 "	1·5–2·2 "
Tumor, length..............	2·4 "	2·6 "	
Tumor, thickness...........	2·1 "	1·3 "	
Stomach wall...............	3–4 mm.	2½–3 mm.	1·5 mm.
Lumen pylori...............	2 "	1·5 "	
Mucosa pylori	2–2½ "	1·5–2 "	
Submucosa and muscularis ...	5–6 "	3·5 "	
Serosa......................	1 "	0·75 "	

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[*] *Nederlandsch Tijdschrift voor Geneeskunde*, No. 25, December, 1896.

[†] *The Disorders of Digestion in Infancy and Childhood*, London, 1897, p. 315.

[‡] *Scottish Medical and Surgical Journal*, June, 1897.

ENDEMIC MULTIPLE NEURITIS (BERIBERI).

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MEDICAL COLLEGE OF ALABAMA, MOBILE;
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(*Concluded from page 691.*)

There is no specific treatment for the disease. The obvious indication in this as in other forms of multiple neuritis is removal of the cause, although, unfortunately, in our outbreak the causes were of a general nature and not immediately removable, so that our therapeutic efforts were chiefly directed toward the relief of the more distressing symptoms in each individual case. Cathartics, especially calomel and magnesium sulphate, gave in many cases undoubted relief, diminishing the intoxication symptoms as well as the œdematous effusion. For the relief of the pain morphine and coal-tar derivatives were employed, the former being the most efficacious. Hot applications occasionally gave some relief. Quinine produced no visible effect in any instance. Heart stimulants—digitalis, strophanthus, strychnine, etc.—were seemingly powerless to modify the cardiac weakness or distress, as were also the hypodermic injections of camphor used in a few cases. After the acute stage was passed tonics were used, and to aid in restoration of function to paralyzed muscles electricity and massage were given quite generally, with probably some benefit. The disease is very intractable and uncertain in course, termination, and reaction to drugs.

For orientation it should be remembered that multiple neuritis in most of its forms and varieties is a result of the action of some toxic substance upon the peripheral neurones, a long list of chemical salts, vegetable alkaloids, autogenous poisons, and bacterial toxines possessing the power of causing the disease. The symptoms of all forms of neuritis are largely those of abolition or perversion of function of the diseased nerves; and they vary with the severity of the disease and its distribution rather than with the nature of the poison, although the latter has some influence in determining the clinical features of the affection. Thus, the forms of neuritis due to alcohol, lead, syphilis, etc., are of slow and insidious onset and afebrile; the forms accompanying acute bacterial infection, on the contrary, are of rapid onset and show the fever and other systemic disturbance usual in acute germ diseases. Clinically, beriberi belongs to the last-named group; its distinguishing feature is its endemic and seeming epidemic occurrence—*i. e.*, its occurrence in numbers of persons about the same time in the same locality.

Entering now upon the question of the causation of beriberi, we find that much uncertainty and diversity of opinion prevail. There seems, in the mode of onset and clinical history of the disease, good ground for the growing belief that its exciting cause is a specific micro-organism.

Simmons * suggested some years ago that this germ "bears many striking resemblances in mode of production to paludal or marsh miasm, though entirely distinct and separate from it," and more recently Scheube and Glogner † publish the results of some observations leading to a similar conclusion—*i. e.*, that beriberi is a protozoal disease, resembling malaria in ætiology—and also claim the discovery of an organism in the blood which bears some resemblance to the *Plasmodium malariæ*. A commission appointed by the Dutch Government to investigate the nature of the disease reported in 1886 the discovery in the blood and tissues of a micro-organism resembling that of splenic fever, and which could be cultivated outside of the body. Further reports, confirmatory or otherwise, as to the nature and causative influence of this bacterium have not come to the notice of the writer.

Among a long list of predisposing causes the following are of most importance: Insufficient, unwholesome, or unsuitable food, especially excess of carbohydrates in the dietary (rice diet); unhygienic and unsanitary surroundings and mode of life—such as dampness, defective ventilation, overcrowding, etc.—the causes, in short, favoring the development of scurvy and other inanition diseases; to which may be added unfavorable climatic conditions, as excessive or long-continued heat.

Turning to a consideration of the circumstances under which the disease developed at this institution, and omitting unnecessary detail, it may be stated that at the time the outbreak occurred the food supply was amply sufficient in quantity and fulfilled all of the requirements of a liberal dietary; there was no excess of starchy food. There had, during some years, been a gradual improvement in the quality of the supplies purchased, and in the cooking and serving of the food, and the dietary of 1895–'96 showed a distinct improvement over that of any preceding year in the institution's history.

The general sanitary condition of the hospital was also good. In common with many other State insane hospitals we have suffered somewhat from overcrowding, but this has never been excessive, and was not greater during the year or two preceding the appearance of the first cases than it had been during fifteen years previous; and at the time of the second and most severe outbreak it was less—in fact, there was no overcrowding to be complained of; for in February, 1896, a new building, capable of accommodating a hundred patients, was opened, entirely relieving whatever congestion previously existed. Furthermore, in this latitude there are comparatively few weeks in the year during which windows and doors can not be kept open, insuring sufficient ventilation. In addition, all of the patients, save those sick in bed, work out, walk out, or sit in the yards and airing courts daily, except when rains and cold prevent, which is not often.

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* Article Beriberi, in Pepper's *System of Medicine*.

† Virchow's *Archiv*, vol. cxxxii.

The summers in this portion of Alabama are long and hot, and there is much warm weather in every month of the year, except about two months in winter. Most of the rainfall occurs in winter and spring, the summer and autumn being the dry season. The summers of 1895 and 1896 are commonly recognized as having been the hottest and most enervating experienced here in many years, and that of 1896 the driest, opinions fully corroborated by the weather bureau, the report of which shows that the mean temperature for the months of July, August, and September, 1895, was higher than that of a similar period during any previous year since a record has been kept, and that of 1896 a degree higher still, the figures being:

TABLE II.

Showing Mean Temperature for Months of July, August, and September, at Tuscaloosa, Ala., in Fahrenheit Degrees.

1882	75·6	1890	No record.
1883	No record.	1891	No record.
1884	79·7	1892	No record.
1885	78·3	1893	No record.
1886	80·0	1894	78·5
1887	No record.	1895	80·5
1888	76·4	1896	81·5
1889	76·9		

Note, however, that there is no direct relationship between excessive heat and our beriberi outbreak; the first thirteen cases appeared in February, November, and December, 1895, *not* during the summer season, and the second group of cases occurred in September and October, 1896, after the period of extreme heat had passed, although, in this instance, the depressing influence of the previous two months of intense heat probably acted as a contributory cause.

The town of Tuscaloosa is situated on the Warrior River, two hundred miles from the Gulf of Mexico, at an elevation above the sea of about three hundred and thirty feet. The insane hospital is located two miles above the town, near the river, which forms one of the boundaries of the hospital tract. Save during periods of low water the river is navigable for small steamers as far as Tuscaloosa, but here the stream has a fall of twenty-seven feet in the two miles between the hospital and the bridge at Tuscaloosa, and above this point there are numerous "shoals," or rapids, separated by stretches of deep water in which the current is sluggish. In opening the river to navigation above Tuscaloosa three locks and the necessary dams have recently been constructed on the rapid opposite the town, converting this rapid into a series of deep, still pools, the uppermost of which extends to the next "shoal," a distance of some nine miles.

The dam which created this uppermost and longest pool was partially completed in 1894 and the level of the water above it raised a few feet; it was finished in the summer of 1895, the water level being then permanently elevated ten to twelve feet, backing up the water for long distances into the small brooks and creeks which empty into the river, killing the fringe of shrubs, trees, and other vegetation along either bank, and filling the water with dead and decaying vegetable matter.

This dam is at the lower boundary of the hospital tract; the principal group of hospital buildings is a half mile from the pool it creates. The main hospital sewer discharges its contents into the river three hundred yards *above* the dam. Three quarters of a mile above the main sewer a second small sewer empties in, carrying chiefly the waste water from the hospital laundry, but also the sewage from several water-closets. A short distance above this the water company which supplies the town of Tuscaloosa has its pump house, the suction pipe entering the river not more than one hundred feet above the sewer. There is a group of buildings at the hospital farm, above the water company's pump house; the sewage from these buildings flows in a small brook, which, after a course of three quarters of a mile, finds its way into the river on the same side as and three quarters of a mile above the pump house.

There are about fourteen hundred persons at the main hospital group, and a hundred and ten at the farm. There are, approximately, one hundred and fifty thousand gallons of sewage a day emptied into the river above the dam.

Since the erection of the dam there has been, except during a freshet or rise, no perceptible current in the river. During the unusually dry summer and autumn of 1896 the pond above the dam became almost stagnant, evaporation and the leakage through the stone dam more than counterbalancing the flow of water down stream, the result being that the water altogether ceased to run over the dam, and the level in the pond slowly fell. The water then acquired an abundant scum for some distance above the dam, and at the points of entrance of the three sewers a distinctly unpleasant odor was perceptible. It was even alleged that the water as used in Tuscaloosa had an offensive odor; but this was not noted at the hospital. The condition in the late fall of 1895 was approximately as above described, only not so bad.

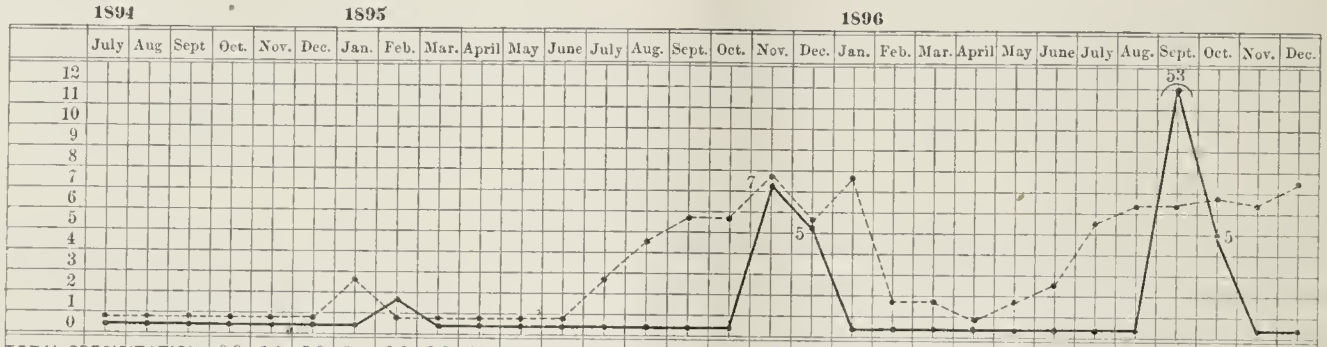
Now, from the opening of the hospital until 1895, a period of thirty-four years, the sole source of the water used in the institution was a large spring. With the gradual growth of the institution the supply of water by degrees became insufficient, and after a dry autumn season, which probably diminished its flow somewhat, it was found necessary to supplement the spring by water purchased from the Tuscaloosa Water Company. The mains of the two systems were connected, and the water was pumped directly from the river into the hospital tank and was more or less diluted by such water as the spring continued to furnish.

This river water—the tank twice full—was first taken in January, 1895, at the close of a season of drought, the river being still near low-water mark. Our first case of beriberi occurred two or three weeks later, in February. No more river water was used until July, 1895, the river in the mean time having been continuously at from five to thirty-five feet above "low water." After July the water was used in increasing amount during several months. The dry season coming on, the water in the river reached low-water mark in October, and remained low during November and half of December. In November and December twelve cases of endemic neuritis developed, the last one about the 1st of January, two weeks after the river had begun to rise. The river water was used now and then during the winter and spring of 1896, but the stream was well above low water most of the time. As the dry summer season came on the water was used more liberally. The river fell to low-water mark in August, and about September 1st our worst epidemic of beriberi began, the last case occurring on October 21st, although the water in the river remained low and was continuously used. For a concise statement of the facts of the case the reader is referred to Chart VI.

furnishing forty-four cases of beriberi. The colored women, who suffered extremely from malaria during both 1895 and 1896, furnished only one case of beriberi during the two years, and the hundred colored male patients at Graystone Farm, who also were attacked by malaria both years, had no case of beriberi appear among them.

Of course, the question suggests itself, Was the epidemic one of malarial neuritis, such as is known to occur in the island of Jamaica and some other parts of the world? This seems to us improbable. We had, as stated, much malaria at the same time; some patients had malaria, some had neuritis—no patient had both. The malarial organism was not detected in any instance, although it was especially sought for. A number of the blood-slides were also submitted to Dr. George S. Brown and Dr. Cunningham Wilson, of Birmingham, who concurred in the opinion that nothing resembling a malarial plasmodium existed in any one of them. And, lastly, quinine exerted absolutely no influence over the course of the disease.

Chart VI.



	July	Aug	Sept	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL PRECIPITATION =				0.9	1.0	5.9	7.4	2.2	7.3	2.7	4.8	6.5	6.5	1.9	2.4	2.3	1.9	5.7	4.1	4.1	5.1	4.7	3.5	6.9	4.0	1.2	0.6	1.7	2.7	1.1
HEIGHT OF RIVER =				0	0	4	5	33	25	15	10	4	5	1	1	0	0	4	7	12	35	7	3	3	1	0	0	0	0	1
MEAN TEMPERATURE =				62	49	46	42	36	53	63	70	79	81	81	78	59	51	42	42	46	52	69	78	78	83	84	76	63	55	46

The black line shows the number of cases of beriberi. The dotted line shows the number of times the hospital tank was filled with river water (each tankful being fifty thousand gallons). Total precipitation in inches and tenths. Height of river above low-water mark (average for the month) in feet. Mean temperature in Fahrenheit degrees (the nearest whole number).

While some years ago malaria prevailed extensively along the Warrior River, during a decade or two preceding 1895 it had been a comparatively infrequent form of disease in and about Tuscaloosa; and at the hospital especially it had been rarely seen. Beginning at the time of the construction of the dam above referred to, there was a quite remarkable exacerbation of malarial disease at the hospital, as well as in the town, cases of intermittent and remittent fever and some pernicious forms becoming only too common during the summer and fall of 1895, and sporadic cases cropping out through the succeeding winter. With the return of warm weather in 1896 there was still a greater wave of malarial disease inaugurated, which persisted through the autumn and early winter. The outbreaks of beriberi have occurred at the time or just after the malarial diseases have been at their worst, but with one doubtful exception the two diseases have not occurred in the same patient. In 1895 the majority of our cases of malaria occurred among the white male patients and among the negroes; the majority of beriberi cases among the white females, who were suffering but little from malaria. In 1896 the conditions were nearly reversed, the white women developing many cases of malaria, but only thirteen of beriberi; the white men, who suffered very little from malarial disease,

Along with this accession of malarial disorders there was a notable increase in the amount of dysentery and diarrhœal disease, and both at the hospital and in Tuscaloosa there was a rise in the death-rate. At the hospital the death-rate during 1896 was nearly double what it had previously been.

The seemingly pertinent circumstances under which the outbreak of beriberi occurred are given without comment, leaving the reader to formulate his own opinions as to the probable cause of the disease. Passing the facts in review, the following conclusions seem, however, not unwarranted:

1. That the dietary and the sanitary condition of the institution were not such as predispose to the occurrence of beriberi or other inanition disease.

2. That the feeble-minded and degenerate insane are especially susceptible to the disease.

3. That the sedentary life led by a portion of the patients was a further predisposing cause.

4. That the exciting cause of the disease developed in the recently dammed up river with and under the circumstances favoring the growth of the malarial germ

and was transmitted in miasmatic exhalations or in the water used for drinking.

The fact that the disease did not appear in Tuscaloosa, where the river water was extensively used, is explained by the fact that there were not in Tuscaloosa a number of inactive epileptics and other degenerates, who alone supplied the material for the development of the malady. It may be assumed that the activity of the toxic agent was only sufficient to cause the disease in those most predisposed to it. Intensify the poison and other classes at the hospital and the population of Tuscaloosa might not escape.

The disease occurred at the hospital only when water taken from the river at its lowest stage was used—taken at the time the contamination from sewage and decaying vegetation was greatest. The disappearance of the disease after October 21, 1896, while the use of the water from the low river was continued, was due in all probability to the fact that all susceptible to the disease had taken it by this time; and the coming of cooler weather may also have caused a rise in vital tone and resisting power.

The only instances of the occurrence of beriberi in the United States which have found their way into medical literature are: First, sundry sporadic cases brought on shipboard from Asia and tropical America to New York, Philadelphia, San Francisco, and other seaports, reported by Seguin,* Hebersmith,† Roosevelt,‡ Boenning,# Wertenbaken,‖ and others. Second, an epidemic among the New England fishermen of the Grand Banks, which occurred some years ago and was studied and reported by J. J. Putnam.△

A number of letters of inquiry addressed to practitioners of medicine in Alabama and other Southern States, to some of the prominent neurologists and teachers, and to the superintendents of insane hospitals in all portions of the country resulted in the discovery of one other epidemic of beriberi. This occurred at the Arkansas State Insane Hospital, Little Rock, in 1895, and having never been reported its chief features are briefly given below, and as far as possible in the words of Dr. W. B. Barner, assistant physician, who kindly wrote me an account of the outbreak:

"The cases numbered between twenty and thirty in all, and occurred during the months of July, August, and September, 1895. The prominent symptoms were malaise, with rise of temperature to 100° to 102° F. in the afternoon (a degree less in the morning), œdema of ankles, motor paralysis of legs, loss of patellar reflex, and foot-drop. In some cases the limbs were hyperæsthetic, in others partial anæsthesia was observed; some suffered much pain, others almost none. The gravity of the cases varied, the milder showing œdema of ankles with ill-defined paralytic symptoms, the severe ones complete motor paralysis of legs. Only one case proved fatal—a young negro man, already reduced to the lowest degree of health by chronic maniacal excitement.

"All except three or four of the cases occurred among the male patients. At the time, however, that this neuritis was so prevalent on the male side of the hospital, almost every patient on the female side was suffering from pronounced malarial symptoms, several deaths occurring from the classic pernicious intermittent malarial fever. It was very noticeable that whereas almost all of the women suffered from malaria the men supplied nearly all of the neuritis cases. At the time of the outbreak our entire rear campus was excavated for the purpose of laying a sewer system, much damp earth being exposed to the sun's rays. There were frequent rains, followed by very hot days, and all of the conditions seemed favorable to the development of the malarial plasmodium."

It will be observed that in its general character and clinical features the outbreak was very similar to that which is made the subject of this paper, save that the cases were of milder type. Note the interchange with malaria, and compare our experience on this point as given above.

It may with reason be assumed that the above enumeration embraces all of the beriberi which has thus far occurred in this country. While rare among Europeans and their descendants in all parts of the world, the malady in epidemic form has several times appeared in Europe, the first instance being an outbreak in France in 1828, referred to by Starr,* and the last, and in this connection most interesting, the epidemics at the Richmond District Asylum, Dublin, which have been recently mentioned incidentally in the medical press, but of which no detailed account has yet appeared.

In reply to a letter of inquiry Dr. Donelan, the chief medical officer, has communicated the following facts:

The first outbreak occurred in 1894, beginning early in June, no case occurring after September. About one hundred and fifty patients were attacked, and twenty-five deaths occurred. A second epidemic occurred during the summer of 1896, first appearing in July and attacking in all about a hundred patients and six nurses. A larger number of females than males have been affected.

This outbreak has quite generally been attributed to overcrowding, faulty sanitation, and dampness, conditions entirely absent at Tuscaloosa.

In view of the close ætiological and pathological relationship existing between endemic multiple neuritis and acute anterior poliomyelitis, it will be interesting to briefly consider in this connection an epidemic of the latter disease which occurred in Rutland County, Vermont, during the summer of 1894, and which was investigated by Dr. C. S. Caverly, from whose published accounts of the epidemic the following facts are taken:

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* *Medical News*, December 11, 1886.

† *United States Marine Hospital Report*, 1881.

‡ *Medical Record*, February 19, 1887.

# *American Journal of the Medical Sciences*, May, 1894.

‖ *United States Marine Hospital Report*, 1895.

△ *Journal of Nervous and Mental Disease*, August, 1890.

* Multiple Neuritis and its Relation to Certain Peripheral Neuroses. *Medical Record*, February 5, 1887 (Middleton Goldsmith Lectures).

The epidemic began in the latter part of June, reached its height in August, and subsided by October 1st. There were "upward of a hundred and thirty cases," almost all of them occurring in the valley of Otter Creek, "a sluggish stream, dammed at several points," and "below Rutland carrying a large amount of sewage." The majority of the cases occurred at and below Rutland. The cases were not more numerous in dwellings situated immediately on the stream, but most of them occurred near Otter Creek or its tributary brooks. The summer of 1894 was unusually hot and dry, and the water in the stream at a very low stage. Most of the cases occurred in children, although some adults were attacked. Many domestic animals—horses, dogs, fowls—were also affected.

The chief symptoms were motor paralysis in arms or legs, with minor sensory disorders and much cerebral disturbance, leading in some cases to the diagnosis "meningitis." Dr. Starr, Dr. Dana, and Dr. Jacoby concurred in the opinion that the disease was acute anterior poliomyelitis, although many of the cases were recognized as atypic. In reply to my inquiry as to whether it was possible that there might have been cases of neuritis interspersed among those of poliomyelitis, Dr. Caverly writes: "There is no doubt some of the cases in our epidemic of 1894 were neuritis, but, occurring with so many of undoubted poliomyelitis, there is no doubt the essential disease was of the latter character."

Some of the circumstances attending this epidemic of poliomyelitis in Vermont are very similar to those prevailing at this hospital during the last epidemic of beriberi—the proximity of a sluggish stream, dammed at several points and containing sewage, together with unusual heat and dryness.

A somewhat similar outbreak of poliomyelitis on a smaller scale occurred during the summer of 1896 in Greene County, Alabama, about forty miles south of Tuscaloosa. I owe to Dr. G. A. Moore, of Clinton, most of the information obtained concerning the cases, which were fifteen or more in number, scattered over an area of country ten to fifteen miles in diameter. Adults as well as children were attacked; the disease began with fever and general systemic disorder, which was generally diagnosticated as "malaria," there being much malarial disease in the community at the same time. A few days to a week or two after the fever appeared some paralysis developed, involving sometimes one upper or one lower extremity, sometimes both extremities on one side, sometimes both upper or both lower extremities, and in one or two instances both lower and one upper extremity. Most of the patients recovered entirely and all improved, but in some there is still, seven to nine months after attack, some paralysis and muscular atrophy remaining. Dr. Moore mentions that some of the negroes who had the disease thought they were "conjured," and refused to submit to medical treatment. One of the cases, a white boy, twelve years old, was brought to me for consultation and diagnosis, giving opportunity for a thorough examination, which left no doubt that the disease in this case was acute anterior poliomyelitis. The histories of the other cases furnished me by Dr. Moore point conclusively to poliomyelitis as the correct diagnosis of them all.

Two or three cases of infantile paralysis have occurred in and near Tuscaloosa during the past twelve months, but there has been nothing approaching an epidemic of the disease.

Of our fatal cases of beriberi seven were brought to the autopsy table. The post-mortem appearances and the results of subsequent study of the tissues will be made the subject of a future report.

Suffice it in this connection to say that in at least one case there was evident degenerative change in the motor cell bodies in the anterior gray horn of the cord; that in no case were there redness, hæmorrhages into, or gross inflammatory changes in the nerve trunks, the lesion, so far as yet determined, being a degeneration in the nerve filaments themselves, and there were the usual degenerative changes in the muscles supplied by the affected nerves, including the heart muscle in those cases in which the vagus participated in the lesion.

SEPTICÆMIA IN THE PUERPERIUM.

By CHARLES J. C. O. HASTINGS, M. D. C. M.,
L. M. AND L. K. Q. C. P. I.,
TORONTO, CANADA.

(*Concluded from page 705.*)

Treatment.—This is largely preventive, and should begin with conception. Careful attention to the hygiene of the pregnant woman can not be too forcibly impressed on the minds of both husband and wife. It is most imperative that the obstetrician should take a firm stand to dispel that most damnable of all fallacies—mock modesty—by insisting on the patient taking daily exercise in the open air up to the date of her confinement, assuring her at the same time that if these instructions are not carried out he will not be responsible for the result, and that it is a criminal injustice to both the offspring and herself. Careful inquiry should be made in regard to the excretory functions of the body, especially the kidneys, and an occasional uranalysis made in the latter months, particularly in primiparæ, as albuminuria or glycosuria very materially diminishes the natural powers of resistance to septic organisms. In every respect the patient should be prepared as she would be for a surgical operation.

Preparation of the Patient.—At the onset of labor the alimentary canal should be cleansed by a free purgation. The patient should have a hot bath, using freely an alkaline soap—ordinary laundry soap is preferable to any of the bath or toilet soaps—after which the hips and genitals should be washed over with a carbolic solution (1 to 40). If the hair is long about the genitals, it should be trimmed off. The room should be prepared as for a surgical operation, and should be so situated as to get the greatest possible amount of fresh air and sunlight. The bed linen and patient's clothing should be fresh from the laundry. We often find in these cases that there is a desire to use a soiled skirt or sheet to put under the patient to economize in the washing; this can not be too strongly condemned, as everything that comes in contact with the patient should be surgically clean.

Now that we have already shown the practical improbability of self-infection we can readily see the extreme responsibility resting on the attendants, as we have at last been forced to the conclusion that the attendants are the principal source of septic infection. When we consider that it is necessary to boil a polished steel or nickel-plated instrument in order to render it aseptic, we can easily see the task we have before us in order to thoroughly cleanse our hands, as they are, no doubt, the medium by which, in the majority of cases, we convey the infection, as they afford not only a harbor but also a favorable medium for the production of septic organisms, especially under and around the finger nails, for they are exposed at all times to infection, and the most virulent types of it. The nails should be kept short and well trimmed. The hands may be cleansed by either of the following methods:

Ferbringess (14), after a number of experiments, decided as follows: First remove all dirt from beneath and around the nails. I will take the liberty of stating here that this should never be done with a knife, as this roughens the lower surface of the nail and affords another harbor for the septic organisms; it should therefore be done with a suitable nail cleaner, by which the lower surface of the nails can be kept smooth and polished. Then brush the nails and fingers well with an alkaline soap and water, hot as can be borne; bathe in pure alcohol for one or two minutes, and after that, before drying, in a 1-in-500 bichloride solution for two or three minutes. I prefer 1-in-40 carbolic solution. Or you may use Kelly's method—*i. e.*, with the permanganate.

According to Crookshank, than whom there is probably no better authority, one minute in pure alcohol or 1-in-40 carbolic solution will destroy any of the organisms.

Ante-partum Douche.—This should be reserved for those cases in which we have a pathological discharge, according to Doberlin's definition of the term. Personally, I have very little faith in the douche, only for its mechanical effect in washing away any superfluous matter from the uterus or vagina. If we have a pathological discharge, and wish the vagina aseptic, we can not trust to the douche, as cultures have been made from the vagina after the douche had been used for some time. Professor Shuttleworth told me that he had on different occasions made cultures of streptococcus and staphylococcus from the throats of children in which the spray of bichloride had been used for some time, immediately preceding the taking of the swabs. I use a large-sized Fergusson's speculum, and with absorbent cotton on a sponge-holder and a 1-in-40 carbolic solution thoroughly scrub out the vagina. One can readily see how myriads of bacteria may escape untouched in the folds of the undilated vaginal walls.

After the second stage of labor is complete we should see that the patient loses the least possible amount of blood. If there is much oozing the placenta should be expelled by Credé's method. If this fails, the sterilized hand should be introduced at once and the uterus cleaned out; but before this is done a full dose of Squibb's or Parke, Davis, & Co.'s normal liquid ergot should be given, and repeated again in two or three hours, by which we may hope to produce firm contraction, and thereby close up the channels for absorption by agglutination rather than by thrombi. We should be careful to see that no part of the placenta or membrane is left behind. My custom is to have a 1-in-40 carbolic solution in a basin beside the bed, in which I always dip the hand before making an examination. If any lubricant is necessary, I use soap or sterilized vaseline.

On no consideration should the obstetrician think of making an examination without first removing his coat and putting on a sterilized apron; or, in the absence of that, a large freshly laundered towel would do to keep the hands from coming in contact with the clothing. What is more disgusting than to see a surgeon go to the operating table with his coat on? and this is quite as objectionable in the lying-in chamber, and yet I am sure that this must frequently occur, as I have on more than one occasion had patients tell me that they were terrified at first when they saw me take my coat off, thinking there must be something wrong, as their former attendants had never done so.

Though I am opposed to the routine ante-partum douche, yet I strongly recommend the post-partum cleansing of the entire parturient canal in all cases in which we do not get firm contraction after the expulsion of the placenta, or in instrumental cases. One only requires to note the amount of *débris* that is washed away with the post-partum douche to convince him of the importance of this practice.

It is a most unfortunate fact that there is such a prejudice against the prompt introduction of the hand into the uterus to remove an adherent placenta. Now, we all know that in our earlier years of practice at least we would sit for probably half an hour or more, holding our hand on the uterus, notwithstanding that every few minutes we would be startled with a gush of probably one or two ounces of blood, waiting for Nature to expel the placenta. To say the least of it, this is a very cowardly and non-surgical procedure. The loss of blood will very much more jeopardize the patient than the introduction of the aseptic hand under strict antiseptic precautions. What surgeon would think of leaving the amount of *débris* in a wound that the obstetrician leaves in the parturient canal without the use of the douche? It is very well to say that Nature will attend to this, but it is our duty to assist Nature whenever we can, and not leave such stumbling-blocks in her way. We know that by means of heat, which is always at our command, we can render everything that is necessary for the douche thoroughly aseptic, and its use is consequently free from danger. Unless we have a professional nurse, we should see to the cleansing of the patient ourselves, and to the dressing of the vulva, and caution the nurse not to change the pads without first sterilizing her hands as instructed. Any lacerations should be carefully repaired. The patient should be seen at least once a day by the attendant, and the nurse instructed to take the temperature night and morning, as in these smoldering fires we may have a normal temperature in the morning, with a slight elevation in the evening. These are the cases that we so often hear of, where the patient was doing nicely until the tenth day, when she, after getting up, took a chill and went back to bed, probably to die, or for a prolonged period of invalidism. Now we know, as a matter of fact, that these cases of late infection are very rare indeed; they are almost invariably the outburst of an early infection which Nature has been endeavoring to throw off. Instead of the Parisian custom of having two single beds, I have suggested the dividing the mattress in the centre longitudinally, so that the patient can, practically, have a clean sheet and mattress night and day by simply lifting her from one side of the bed to the other, which is more convenient than having the two beds. While she is occupying the one side, the other can be out airing.

From the anatomical structure of the parts we can readily see that Nature has not provided a complete drainage for the parturient canal in the recumbent posture. We have all, no doubt, been reminded of this by the patient remarking that she loses very little, or there is very little discharge except when she first sits up, and then there is quite a gush; this lies in the vagina, in which, probably, a lacerated cervix is being constantly bathed. For the above-stated reasons I have my patients sit up in bed after the second day to take their meals, and after the third day I have the patient sufficiently propped up to secure a complete drainage of the vagina. This, I think, in a great measure explains how the lower class, inhabiting the hovels of the city, without any other protection, and with the worst hygienic surroundings, so well escape the septic infection. I do not allow my patients to leave their beds for two weeks.

And now comes the question that has been so frequently thrashed out in our journals—that is, Can a physician, while in attendance on a case of puerperal infection, erysipelas, scarlet fever, diphtheria, or conducting post-mortems, attend obstetric cases? Now it seems to me that it is time this matter was settled. The attendance on any of the aforesaid cases simply means that the physician has been in contact with the streptococcus or staphylococcus, either of which will, under favorable circumstances, produce septicæmia in the parturient woman. The danger lies in the contact with these organisms, which are ætiological factors in septicæmia. We may convey them by having been in contact with any purulent or muco-purulent discharge, as from the nose or middle ear, etc., so that we can readily see that if it is necessary for the physician to abandon his obstetric practice in one case it is necessary in all, only in so far as the organisms directly from septic cases and erysipelas are usually more virulent. But all that is necessary in any case is to change our clothing and make ourselves surgically clean.

Curative Treatment.—Notwithstanding that all care and precautions have been observed by the attendants, septic cases will occasionally crop up, and our results will depend wholly on the promptness of our action and the accuracy of our treatment. For we have that to contend with which "holds such enmity with the blood of man that swift as quicksilver it courses through the natural gates and alleys of the body." Wyeth, of New York, tells us that under favorable conditions one of these organisms will within twenty-four hours, by dividing and redividing, produce 16,000,000 of its kind; and Watson Cheyne tells us that it requires from 500,000,000 to 1,000,000,000 to destroy life; this dose, of course, is controlled by the virulence of the organisms introduced. However, we can see at a glance the danger of delay, and the importance of depending alone on the clinical thermometer and pulse for the first signal of distress. As I have already said, I never depend on the douche except for its mechanical effect. As for the ante-partum cleansing, I use a large-sized Fergusson's speculum, and thoroughly cleanse the parts with a 1-in-40 carbolic solution. I then carefully wipe out the uterine cavity with absorbent cotton until the cotton comes away practically clean and dry. I then paint the entire endometrium with pure carbolic acid or iodized phenol; this rarely requires to be repeated. If the symptoms continue and there is evidence of fresh absorption, I then thoroughly curette the uterus and paint it afresh with the carbolic or iodine. This form of treatment is in my experience very satisfactory, causes the least inconvenience to the patient, and the articles necessary for it are always in the physician's satchel, so that there need be no delay. The details of this treatment must be most accurately carried out, otherwise we need not be surprised, on calling on our patient the following day, to find that there is still another Richmond in the field. When carefully done, no further treatment is necessary if the case be detected in time; but, unfortunately, often the first intimation the physician has is a severe rigor some days after labor, followed by high temperature, which will not yield to local treatment. These are mostly cases of streptomycosis, for which, happily, the bacteriologists have come to our rescue with their antistreptococcic serum. I shall as briefly as possible refer to a case of my own which I treated with the serum within the last four weeks.

Mrs. P., aged thirty-five years, mother of two children, had had two miscarriages. Was called to see her on a Monday. She had had a severe rigor. Temperature, when I saw her, was 105° F.; pulse, 120. The following day she informed me that she had had an offensive dark-colored discharge for three or four weeks, and had not seen anything for two months before that. I subsequently learned from her husband that she had gone to a notable in the West and had been operated on twice by him. On examination, I found a dark, purulent discharge and the cervix covered with a yellowish-brown membrane. I curetted the uterus and then swabbed it with iodized phenol. I then put her on large doses of quinine, and ordered ice-water sponge baths every hour. This would only reduce the temperature about one degree, and this in every case would go up again inside of an hour. These symptoms continued for three days, the patient then presenting all the appearances of a very virulent infection; a short, rather rapid, catchy respiration; was quite cyanosed; a general mottled condition of the skin; very drowsy. There was a well-formed membrane on the tonsils, closely resembling that on the cervix uteri. In the afternoon of that day I injected sixteen cubic centimetres of Parke, Davis, & Co.'s antistreptococcic serum. The pulse, immediately before the injection, was 145; temperature, 105° F.; twelve hours later the pulse was 105 and the temperature 102°; twenty-four hours later the temperature again went up to 103.1°. Again I injected another sixteen cubic centimetres, after which the temperature dropped to 101° F., and remained down for thirty-six hours, after which it again went up to 103.4° F. I then repeated the injection, which was followed by a drop to 100° F. The temperature ranged between this and normal for three days and nights, when suddenly it began to rise, and within two hours it went up to 105° F. I injected sixteen cubic centimetres of the serum and in twelve hours the temperature was normal. At no time were there any bad symptoms following the injections. The improvement in the facial expression soon after the first injection was very marked. Bacteriological examination showed myriads of *Streptococci pyogenes.*

Several cases of serum treatment have been reported within the past year, and with one exception all have been successful. In the cases by Josue and Hermary there was a rapid improvement, with perfect recovery in a few days. Rogers, of Paris, has reported several cases, both of puerperal fever and erysipelas, successfully treated in this way.

There have, during the past two or three years, been very gratifying reports from the use of copious injections of artificial serum or normal salt solution, either intravenous, subcutaneous, or by means of the high rectal injections. I have used the latter very freely in all fever cases; the copious flow of pale urine which follows the injections is quite convincing of itself. When copious intravenous injections are given, they are followed by free watery stools and large quantities of pale urine. One can readily see that this is a very efficient way of washing the blood. Though I have not seen it recommended, yet I think it would be a perfectly rational treatment, in a very severe case, to draw off a quart of blood at a time, and at the same time inject about two quarts of the artificial serum into the vein of the other arm. This could be done with perfect safety, as we know that in severe hæmorrhages the patient does not collapse from the loss of blood *per se*, but from the loss of fluid, as very little blood is required to sustain the system; but a certain amount of fluid must be kept in the vessels in order to keep up the mechanism of the circulation.

Leech recommends the following powder, which, when added to a pint of warm water, yields a solution of the normal salinity of the blood:

Chloride of sodium.........	50	grains.
Chloride of potassium.......	3	"
Sulphate of sodium.........	2.5	"
Phosphate of sodium........	2	"
Carbonate of sodium........	2.5	"

This he uses just about as hot as the hand can be borne in it. In every case the general strength of the patient must be kept up with good nourishing food and stimulants, as required.

If all these precautions are observed, and the different lines of treatment carefully carried out, the cases we will require to hand over to the abdominal surgeon will be very few indeed.

And now all that has been said, or all that can be said, is practically useless, as it has been in the past, unless we can arrive at some conclusion as to what is the best means by which septicæmia can be prevented in private practice. In 1875 the International Congress of Physicians and Surgeons, assembled at Brussels, adopted a resolution to the effect that on account of the great mortality in lying-in asylums, all such institutions should be abolished; but now the tide has turned. In the best-conducted lying-in hospitals death from sepsis is almost unknown, while in private practice, according to statistics, the mortality is 1.12 per cent., as against one per cent. in the lying-in hospitals. Now, I do not intend to burden you with statistics, but will refer any that are at all skeptical to the *American Text-book of Obstetrics.* Notwithstanding all the indisputable evidence we have of the enormous reduction in mortality by the introduction of antiseptic midwifery, yet I make bold to say that there is probably not five per cent. of the physicians on the continent of America that practise strict antiseptic midwifery to-day, who are surgically clean in every detail. A great number put a few drops of carbolic acid into a basin of water and think they are filling the bill; this is infinitely worse than not touching them at all. We can advisedly say in these cases that a little antiseptic is a dangerous thing: we must dip deep, or touch not, of the germicidal spring.

In consideration of the frequency of death still occurring in childbirth in private practice, the Obstetrical Section of the New York Academy of Medicine passed a resolution to the effect that any physician practising midwifery should surround his patients with the same safeguards that are being used in the lying-in hospitals. Now, when we consider that we have human life at stake, and the most valuable form of it, I think this resolution is too modest, and in view of all this evidence that the physician who fails to practise strict antiseptic midwifery is guilty of criminal negligence.

Labor a Physiological Act.—That this is the case, I am sure we are all willing to grant, but the obstetrician has to do more with the results than with the act itself, and in this he has more or less traumatism to deal with, even independent of the placental site, which by some has been compared to the stump of an amputated limb. One might almost as well say when a man contracts an attack of gonorrhœa, that it is a physiological condition, for certainly the act by which he contracted it is physiological, but the result is decidedly pathological. Unfortunately, Nature has not made the same provision for woman that she has for the lower animals, for with them, as a rule, the act of expelling their offspring is not more difficult than that of defæcation, and the placental site is protected by a layer of epithelium, either before the placenta is expelled or in a few minutes after, as has been shown by the injection of septic matter into the uterus and vagina soon after labor without producing infection, whereas the same matter injected under the mucous membrane was soon followed by severe septic infection. This is the physiological condition of which we hear so much; but the condition of the parturient woman is vastly different from this, and it is most imperative that we eradicate this idea as soon as we possibly can, and thereby hope to make these cases more important in the public eye, and quite equal to a surgical operation.

Remuneration.—Is it not unfortunate, the petty remuneration the obstetrician receives for these most troublesome and most responsible cases that he has to deal with? How many laparotomies would we have performed, even in this great era of abdominal surgery, if the surgeon knew he would only receive from ten to fifty dollars for his operation? Verily, the abdomen would soon cease to be the surgeon's gymnasium! But this question of remuneration is but one of several that have unitedly lowered obstetric practice to the position which it occupies to-day. And yet, if we allow this to interfere for one moment with the most careful conducting of our cases, we are simply putting human life in the scales with dollars and cents. If we are called to set a fracture, no matter how simple it may be, we would not think of charging less than fifteen dollars. And why is this? Because of the responsibility which we take upon ourselves in these cases; consequently, these surgical cases are at all times surrounded with every care and precaution. The same physician, if called the next hour to attend a case of labor, will probably exercise few, if any, antiseptic precautions, and thereby jeopardize the patient's future health, if not her life. Now, in this latter case there is infinitely more responsibility than in the former, for in the case of the fracture the greatest calamity that is at all likely to befall the patient is a disabled limb; while in the latter there may be a sacrifice of life, or a prolonged period of invalidism. But in these cases, unfortunately, the physician has several cloaks from which he can choose a suitable one to cover up his reckless treatment. And as the tide of terror of the parturient woman has turned from the lying-in hospital to private practice, so sure will the tide of malpractice suits be turned from the surgeon to the obstetrician. If an action were brought against a physician at the present time, either for loss of life or prolonged invalidism following labor, and it could be shown that he failed to carry out the prescribed antiseptic precautions in the conducting of his case, with the indisputable evidence that could be produced against him, he could not hope for clemency from any judge or jury. The physician would be as justified in setting the fragments of a long bone at an angle of forty-five degrees as he would be in attending a case of obstetrics without rigid antiseptic precautions. Notwithstanding all this, we are surrounded by all the safeguards that are necessary to protect us from litigation; all that is required is that we be surgically clean in all the details of our cases, exercising over them, for the first five or six days at least, the keen watchfulness of the surgeon; then, if a bad result should follow, our hands are clean of all responsibility, and our consciences as well.

Last, but not least, is the midwife. So long as the public think they can be attended by a woman who has had a few weeks' training as satisfactorily as by an obstetrician who has had years of training and experience, just so long shall we experience great difficulty in elevating obstetrics to the surgical basis which it so justly deserves.

I was amazed beyond measure some time ago, in reading a paper on Puerperal Infection in New York City, by Dr. William F. Bullard, read before the New York Obstetrical Society, and also the discussion of the said paper by the aforesaid society, to learn that they not only discussed the advisability of, but also recommended the licensing of midwives.

Why, we should be more justified in licensing these women, after a few weeks' training, to practise abdominal surgery, as the accuracy of the technique of the obstetrician is quite as important as that of the abdominal surgeon, and the responsibility infinitely greater, for at no other time is a woman's life so precious as when she has herself jeopardized it to produce her kind; and in this so-called advanced age of matrimony, in which it is a disgrace for a woman to have a large family, and in which the birth-rate is materially diminishing yearly, we should not leave a stone unturned to surround such precious lives with every safeguard at our command. It is impossible to conceive of a more trying ordeal, or one that draws more keenly on every cord of sympathy within us, than death occurring in the lying-in chamber; a mother, and all that that word implies, grasped from the side of her helpless offspring, and probably a young family robbed of a mother and counselor, the value of which eternity only can estimate; for, as it has been wisely said, "the hand that rocks the cradle rules the world."

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For the references on self-infection I am indebted principally to the very able papers by Dr. J. Whitridge Williams, of Baltimore, in 1893, and Dr. Thomas D. Dunn, of West Chester, in 1895.

TRANSILLUMINATION:

ITS FALLACY AS A DIAGNOSTIC MEANS IN DISEASES OF THE MAXILLARY AND FRONTAL SINUSES.

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In a paper recently read before the Western Ophthalmological, Otological, Laryngological, and Rhinological Association the following statements were made:

"Transillumination is by some considered unimpeachable. While my experience with it has so far been satisfactory, yet I can see how it might lead one into error.

"Ordinarily, when the sinus shows dark, we will find pus, or at least a greatly thickened mucosa; but let us run briefly over the possibilities: if the sinus shows clear, it means one of two things—it is either healthy or contains a mucocele; if clearer than its fellow, it does contain a mucocele, unless the other sinus be diseased, absent, or contains a solid neoplasm.

"If it shows dark, the sinus contains pus or has a thickened mucosa, unless it be a solid neoplasm or the sinus absent and its place occupied by a part of the frontal lobe of the brain" (Sampson).

Under Empyema of the Frontal Sinuses, in Burnett's *System*, we read: "A valuable aid to the diagnosis is transillumination. If the sinus is in a state of health it becomes illuminated as high as the superciliary ridge, while if it should contain fluid it would remain dark."

In regard to maxillary disease, the writer says: "In case pus or a solid tumor be present in the antrum, that side of the face remains dark, while the opposite is brightly illuminated. In case of cysts of the sinus it becomes much more brilliantly illuminated than the opposite side."

Such are, to-day, the almost universally accepted conclusions in regard to the results obtained by transillumination—conclusions which I believe to be entirely unwarranted as well as dangerous. Unwarranted, because well-known anatomical conditions preclude the possibility of accuracy; dangerous, because the uncertain results obtained may lead to incorrect diagnoses and consequent uncalled-for operative procedures.

That such morbid processes produce such results I admit, but I deny that these results, when obtained, can be attributed to such diseased conditions.

The purport of this paper is to outline briefly the most important atypical anatomical conditions, with their effect upon the transmission of light.

The variations in and the differences between normal pneumatic spaces, not alone in different individuals, but also upon opposite sides of the same, are no less pronounced and characteristic than those occurring in the cranium and face.

These variations in form and size are so frequent and pronounced that it is almost impossible to choose any one as the typical.

All are normal and represent merely different degrees in the extent of the resorptive process that hollows out these cavities from the compact bone.

The normal typical maxillary sinus can be likened to a three-sided pyramid, these sides being known as the orbital, facial, and temporal.

Of the three sides the thinnest is the orbital, the strongest and thickest the facial.

In men the floor of the antrum lies on a level with the floor of the nasal cavities, while in women it is situated somewhat higher.

The cavity, however, that adheres to the typical is an exception, some one or more of the following forms being usually present:

(*a*) The floor of the antrum lies on a plane inferior to that of the nasal cavities.

This condition is due to excessive resorption of the alveolar process, and in many cases has advanced so far that the roots of the teeth extend into the cavity and have as their only covering a thin layer of mucous membrane.

Its fellow of the opposite side may, at the same time, have an unusually high position.

Other conditions being equal, and granted that one cavity occupies its normal level, what result does the light test give us?

Both sides illuminate brightly, but on the one the lower portion remains dark, while the corresponding section of the opposite side is transparent, and we diagnosticate an abscess partially filling the sinus or a solid neoplasm.

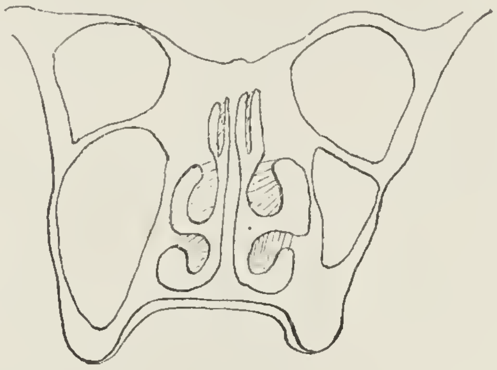

FIG. 1.

(*b*) The facial wall may upon one side be thin, upon the other thick and diploetic.

This is again the result of defective resorption; the cavity lies in the middle of a diploetic bone and its floor occupies a higher level than in the typical specimens.

Zuckerkandl estimates that this condition obtains in fifty-six per cent. of all cases.

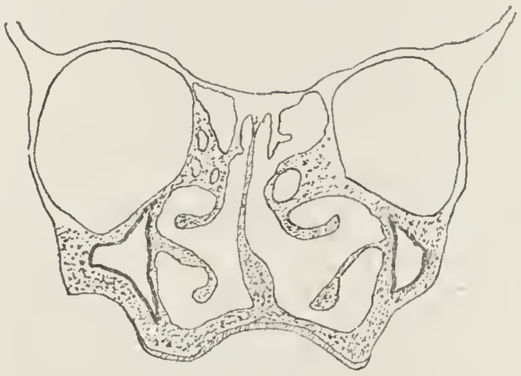

FIG. 2.

In this case, while both sides may transmit light, the one appears clearer than its fellow, and we are told to diagnosticate a mucocele unless the opposite sinus is diseased, absent, or contains a solid neoplasm.

(*c*) One sinus may be entirely absent.

This side will remain dark under transillumination, and we have no means of determining whether it is due to diseased or atypical normal conditions.

(*d*) The antrum of one side may be filled with fatty bone tissue, and cases have been seen in which it was filled with compact bone, probably the result of exostoses.

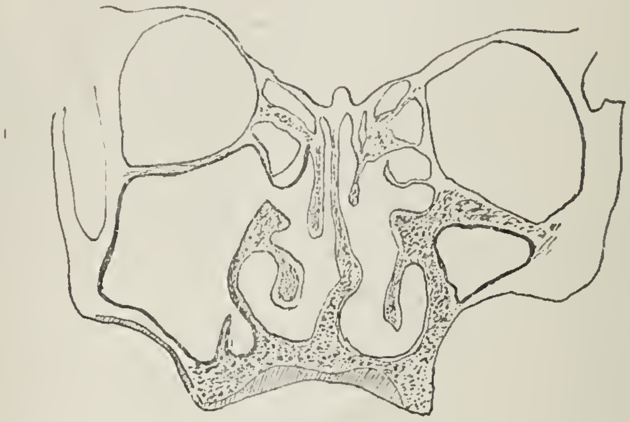

FIG. 3.

(*e*) Both facial walls may be unusually thick and transmit light only to a slight degree, suggesting a thickened mucosa (Fig. 4).

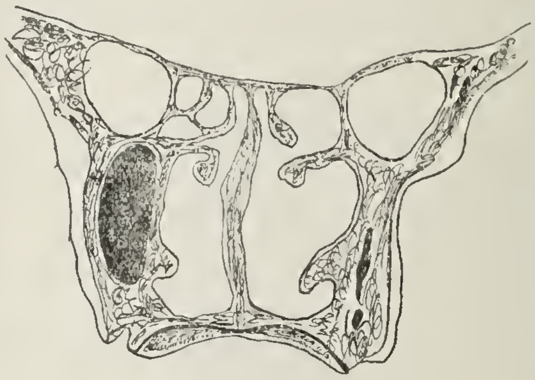

FIG. 4.

Other conditions, not rarely seen, are—

(*f*) Protuberances into the antrum through excessive development of the pneumatic spaces in neighboring bones—viz., posteriorly through a cellula palatina and medially by cellulæ maxillares.

(*g*) One antrum may be divided by a horizontal bony sæptum into two distinct cells; the superior draining into the upper, the inferior into the middle meatus.

Hyrtl reports a specimen in which one part of an already divided antrum was separated into four distinct compartments by three bony sæpta lying one behind the other.

(*h*) Frequently, through a sinking in of one or more of the walls, the sinus will be so contracted that only a narrow cleft remains.

Some conditions, rarely met, are included in the following classification of Zuckerkandl's:

I. Enlargement of the antrum may be due to—

(*a*) Increased vertical diameter, caused by excessive resorption in the alveolar process.

(*b*) Excavations under the floor of the nose.

(*c*) Extension of the cavity into the frontal process of the superior maxillary bone.

(*d*) Excessive resorption in the processus zygomaticus ossis supramaxillaris.

(*e*) A communication between a pneumatic cell of the processus orbitalis ossis palati and the antrum.

II. Stenosis of the sinus may be due to—

(*a*) Defective resorption in the superior maxillary bone at the floor of the antrum (Fig. 1).

(*b*) Approximation of the nasal and facial walls (Fig. 2).

(*c*) Sinking in of the fossa canina toward the cavity.

(*d*) Thickening of the maxillary walls.

(*e*) Various combinations of the above-mentioned conditions.

(*f*) Marked bending of the outer nasal walls toward the cavity (Fig. 3).

(*g*) Retention of teeth.

The Frontal Sinuses.—The frontal cells are two prism-shaped cavities divided in the mesial line by a thick bony sæptum.

They lie in the frontal bone over the root of the nose, and extend laterally in the roof of the orbit and upward between the two tables of the frontal bone.

The size and form of these cavities vary to a great degree.

They are commonly smaller in women and children, but this small size also occurs as a racial peculiarity in the Mongolians. In early life they are completely absent.

Frequently they are very large, as found in most cases where there is a marked bulging of the supraorbital region—viz., the typical Grecian head.

The dimensions, according to two prominent observers, are:

	Michalkovics.	Braune-Clasen.
Height	28 to 40 millimetres.	50 millimetres.
Length	15 to 20 "	
Breadth	20 to 75 "	85 "

Barkow speaks of the frequent occurrence of both large and small sinuses in the same specimen.*

Many of the conditions mentioned in connection with the Highmore's cavity hold true here as well.

A common cause of asymmetry is an atypical position of the sæptum sinuum frontalium.

Sometimes an accessory sæptum is found on one side. Rarely one cell is entirely absent, while unusual thickening of the walls and the occupying of different planes are not seldom met.

Sometimes the cavities communicate with each other; in some instances they communicate with the cavity of the orbit and with the cavities of the ethmoidal sinus (Burnett).

Many specimens show one frontal cell occupied by a large anterior ethmoidal cell. This ethmoidal cell, found by Zuckerkandl in six out of thirty skulls examined, was named by him bulla frontalis.

Would transillumination in such cases give conclusive results? Emphatically, no.

Did all the pneumatic spaces, or even a majority of all, adhere closely to the forms denoted as typical, transillumination would be a most valuable aid in the diagnosis of these diseases.

The atypical cases, however, in point of numbers outweigh the typical, and hence it is that this method can never be of great service.

Where a diagnosis has been definitely made, transillumination may uphold it; without absolute proof of the presence of certain morbid processes, conclusions based upon its results should not be considered infallible.

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Therapeutical Notes.

Antipyrine in the Treatment of Dysentery.—In the *Nouveau Montpellier médical* for October 16th M. Ardin-Delteil relates a case of acute dysentery in which rectal injections of seventy-five grains of antipyrine three times a day proved very serviceable.

Europhene in the Treatment of Fissures of the Anus—Henri Fournier is credited in the *Journal de médecine de Paris* for October 24th with the following formula:

℞ Europhene	3 grains;
Cacao butter	60 "

M. One such suppository to be passed into the rectum every night and morning after emptying it by means of an enema and bathing the region of the anus with a warm decoction of juglans (made with a handful of the leaves and a quart of water). In addition, the anus should be sprinkled with equal parts of europhene and salol.

Chromic Acid in the Treatment of Gonorrhœal Cystitis and Urethritis.—Robbe (*Policlinique,* 1897, No. 13; *Centralblatt für Gynäkologie,* November 6, 1897) recommends irrigation with a one-to-four thousand solution, and says that one of twice this strength may be used if no pain is complained of, but it sometimes gives rise to slight bleeding.

Lithium Iodate in the Uric-acid Diathesis and in Nephritic Colic.—Ruhemann (cited in the *Centralblatt für die gesammte Therapie* for November) gives this formula for subcutaneous use:

℞ Lithium iodate	15 grains;
Distilled water	150 "

M. A Pravaz syringeful to be injected once a day.

The same author recommends the following formula for pills of lithium iodate:

℞ Lithium iodate	2 drachms;
Mucilage of tragacanth	a sufficiency.

M. Divide into fifty pills. One to be taken three times a day.

Benzene in the Treatment of Tinea Versicolor.—The *Centralblatt für die gesammte Therapie* for November cites the following from the *Deutsche medicinische Wochenschrift:*

℞ Benzene,
Tincture of lavender, } .... equal parts.

M. S.: Apply on wads of cotton twice a day for three days.

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* "Herbert Tilley, in an examination of one hundred and twenty skulls, found these cavities varying to a great degree. He found the sinus large enough in some instances to contain an ordinary bean, while the other was ten times as large, and occasionally the sinus was absent."—Bryan, *N. Y. Med. Journal.*

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THE GENITAL MANIFESTATIONS OF MUMPS.

There are some particulars regarding the manifestations of mumps in the genitals about which authors are not agreed. One of these particulars is the situation of the inflammation, whether in the testicle or in the epididymis. Dr. Becigneul, a hospital physician of Nantes (*Gazette médicale de Nantes*, October 30th), has lately reported his observations of an epidemic of mumps in which he had under treatment sixty-three adults affected with the disease, all but one of whom were soldiers between eighteen and twenty-seven years old. In sixteen of them the genitals were implicated, and this proportion, the author thinks, is about the usual one. In three cases one testicle alone was affected; in eight the inflammation attacked one testicle together with the epididymis of the same side; in one both testicles and both epididymides were involved; in one the left testicle and both epididymides were affected, the right testicle being spared; in one the left epididymis and both testicles suffered, the right epididymis escaping; in one the left testicle and the right epididymis alone were attacked; and, finally, in one both testicles and both epididymides escaped, and the involvement of the genitals was limited to inflammation of the funicular portion of the vas deferens of each side.

Some authors, says M. Becigneul, go so far as to say that if epididymitis occurs in an attack of mumps it is a sign of urethral disease and not a manifestation of the mumps, yet not one of his patients, he affirms, had gonorrhœa or any urethral discharge whatever. One of them had been seized with orchitis before his admission, but, except for that, the genito-urinary organs of all of them, subjected to careful examination, appeared absolutely healthy.

Atrophy of the testicle, according to the author, occurs in about two thirds of the cases of orchitis originating in mumps, but in his cases this proportion was much exceeded. When the patients were discharged, he says, which was always within a month from the time of the appearance of the genital complication, their genitals were examined carefully, and the results were almost identical. The epididymis had resumed its normal condition; the testicle seemed to have preserved its ordinary dimensions, but, compared with a testicle that had not been affected, it was incontestably softer and more flaccid. In only one instance was the testicle that had been inflamed found smaller than its fellow. In the two cases of epididymitis without orchitis the testicles had their ordinary size and consistence, and the same was true of the case of inflamed vasa deferentia.

As to the ulterior results, the epidemic seems to have occurred in March, and on the 28th of October M. Becigneul was able to show nine of the patients at a meeting of the Société médico-chirurgicale des hôpitaux de Nantes. One of them, who had had unilateral orchitis without epididymitis, still showed softening of the left testicle, the one that had been affected, but it was about as large as its fellow. Five others had had inflammation of the testicle and epididymis of one side only; in four of these cases the testicle was still soft, flaccid, and manifestly smaller than its companion. In one of these four cases the epididymis remained tender and it was the seat of spontaneous pain when the man was fatigued. The fifth of these patients, whose testicle had been found slightly softened forty days after the onset of the complication, now presented two testicles of normal appearance. The testicles of the man who had had bilateral orchitis and epididymitis, examined a month after his recovery, had been found softer than normal; they were still soft, flaccid, and manifestly atrophied, especially the left one, which had been the more severely inflamed, and both epididymides were sensitive on pressure. In the man who had had inflammation of the vasa deferentia both testicles and both epididymides were absolutely normal, and palpation of the spermatic cords was not painful; the only abnormity observed was slight dilatation of the superficial vessels of the left side of the scrotum.

THE ADMINISTRATION OF ENEMATA TO THE NEWBORN.

An editorial writer remarks in the *Presse médicale* for October 16th that the indications for large enemata are not so common in the newborn strictly so called as in other nurslings, but, as has been shown by M. Bonnaire at the Tenon Maternity, such injections are admirably effective in tympanites with fœtid dejections occurring as the result of taking too much milk, even the mother's milk. But the method of administering them is not the same, he says, as in older infants. The necessary appliances are an ordinary jar, such as is used for vaginal injections, and a Nélaton's catheter in size somewhere from No. 15 to No. 20 of Charrière's scale. The operator sits upon a chair with an impermeable sheet over his knees. The child is laid across his knees in such a way that its buttocks extend beyond the outer border of the physician's thigh and are a little higher than the rest of its body. A very important precaution, the writer adds, is that of putting the child into the latero-dorsal decubitus, with its left hip higher than the right one. This can be accomplished by holding the legs in the left hand, inclining them from above downward and from behind forward, while the infant is seized between the operator's left elbow and the front of his body. Then the catheter is to be taken in the right hand and a little of the liquid allowed to flow out, in order to guard against forcing air into the intestine. The catheter is then moistened, introduced into the anus, and carried to the height of from five to eight inches up the intestine. Then an assistant raises the jar, and the liquid flows readily into the large intestine, while the operator closes the anal aperture with the fingers of the same hand that holds the catheter, so as to prevent the escape of the liquid by the side of the instrument. When all the liquid contained in the jar has flowed into the intestine, the catheter may be disconnected from the rest of the apparatus and the liquid allowed to flow out through it, or it may be withdrawn, so that the infant may expel the liquid by its own efforts, which it will presently do.

The writer thinks that the amount of liquid employed should be about a pint. Simple boiled water may be used or water containing boric acid or sodium chloride. When the dejections are very fœtid, he says, Bonnaire uses instead a saturated solution of naphthol with borax (a thousand parts of water, ten parts of borax, and one part of naphthol). If the movements are glairy, as if varnished, says the writer, it is a sign of inflammation of the lower portions of the large intestine, and a starch injection is to be given. A teaspoonful of starch is boiled in half a pint of water, and a pint and a half of boiled water is added.

The temperature of the liquid injected should not much exceed that of the interior of the body. The height to which the assistant should raise the jar should not be greater than two feet; from a third to half of that elevation, indeed, is enough to make the liquid flow deep into the intestine. The operation may be performed once or twice a day, according to the intensity of the symptoms; it should be resorted to every day until the tympanites subsides and the stools lose their fœtid odor.

It may be remarked that the description of the way in which the child is to be held seems a little vague. As we understand it, it would be rather a semiprone than a latero-dorsal decubitus that would result, and we think that would be preferable.

MINOR PARAGRAPHS.

THE TEMPERATURE IN MEASLES.

Auguste Bourgeois (*Thèse de Lyon*, 1897; *Lyon médical*, October 17, 1897), who has made a study of the course of the temperature in measles, maintains that the progress of the fever is different from that set down in the text-books. The period of incubation, he says, is not always without symptoms; for several days the temperature may be between 100.4° and 102.2° F., but on this point we must be guarded until observations have been made upon persons absolutely healthy before being seized with the disease. The stage of invasion, he says, does not always show a decided remission on the third day. The temperature may rise gradually from the day of the invasion to that of the eruption, or it may at the outset stand at the point that it is to remain at throughout the two stages. The eruptive stage may be prolonged and intense, and the temperature may remain at 104° F. for four or five days. The defervescence, whether sudden or by lysis, is remarkable for the fact that the temperature is lower in the evening than in the morning.

"OMAHA'S QUEER EPIDEMIC."

Under this heading, with the supplementary one of "More than 10,000 Persons Afflicted with a Strange Skin Disease," one of the daily papers lately published a dispatch from Omaha concerning an epidemic skin disease that was said to be puzzling the physicians of that city. How a newspaper correspondent delights in anything that puzzles the doctors or is imagined to puzzle them! Nothing ever puzzles him. This particular wonder-monger says: "The disease develops in small eruptions which cover the body. The eruptions are highly inflamed and finally scale off, like scurvy." We are all familiar with the frisky way in which scurvy scales off, and of course we can not suggest that there has been any confounding of scurvy with scurf. "Every barber shop in the city," says the dispatch, "is provided with a salve which is designed to allay the inflammation." We condole with our Omaha brethren, then, since they have the barbers as well as the counter-prescribers to compete with.

EBERTH'S BACILLUS IN UNUSUAL MEDIA.

Remlinger and Schneider (*Comptes rendus de la Société de biologie*, 1896, No. 26; *Centralblatt für innere Medicin*, October 30, 1897) report that with the aid of Elsner's method they have succeeded in eight out of thirty-six examinations of water, in six out of ten examinations of soil, and in three examinations of the fæces of persons suffering respectively from tuberculous disease, malarial poisoning, and nephritis, but never having had typhoid fever, in isolating a bacillus having all the characteristics of the typhoid-fever bacillus thus far known.

THE QUESTION OF OBJECTIVE SYMPTOMS OF THE SO-CALLED TRAUMATIC NEUROSES.

Rosenthal (*Monatsschrift für Unfallheilkunde*, 1897, No. 8; *Centralblatt für Chirurgie*, October 30, 1897) says that he has tested the existence of "traumatic cardiac action" and "traumatic reaction" (the occurrence of fibrillary muscular contractions) in a great number of patients, and has found these symptoms so lacking in constancy that, in opposition to Rumpf, he feels constrained to deny their practical significance. Indeed, he thinks there are no objective symptoms characteristic of the traumatic neuroses.

THE OCCASIONAL TOLERANCE OF INTESTINAL CONTENTS BY THE PERITONÆUM.

THAT the peritonæum occasionally tolerates the presence of material from the intestine—to the extent, at least, of not becoming the subject of rapidly fatal septic inflammation—seems to be shown by two cases reported by Askanazy (*Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, cxlvi; *Wiener klinische Rundschau*, October 31, 1897). One of them was that of a child, several weeks old, that died with symptoms of chronic peritonitis. At the postmortem examination it appeared probable that during the child's birth its intestine had been ruptured and allowed meconium to escape into the peritoneal cavity. Particles of meconium were found there completely calcified. The other case was that of a man, forty-eight years old, who had been kicked in the belly by a horse. The cæcum was ruptured and two abscesses formed, one of which was situated beneath the diaphragm. Abscesses were formed in the liver also, and one of them perforated the pleura. After death little fibrous masses, not calcified, were found scattered in the peritonæum. Microscopical examination showed that they were foreign-body granulomata that owed their origin to effused intestinal contents.

ITEMS.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox and yellow fever were received in the office of the supervising surgeon general during the week ending November 20, 1897:

Yellow Fever—United States.

Flomaton, Ala.	Nov. 17	1 case.	
Mobile, Ala.	Nov. 13–19	13 cases,	1 death.
New Orleans, La.	Nov. 14–19	49 "	12 deaths.
Biloxi, Miss.	Nov. 14–19	6 "	1 death.
Clinton, Miss.	Nov. 13–19	3 "	
Edwards, Miss.	Nov. 13–19	5 "	1 "
Scranton, Miss.	Nov. 13–19	11 "	1 "

Yellow Fever—Foreign.

Manzanillo, Cuba	Oct. 17–31		5 deaths.
Matanzas, Cuba	Nov. 3–10		2 "
Port au Prince, Jamaica	Nov. 10		1 death.

Small-pox—United States.

Atlanta, Ga.	Nov. 14–17	26 cases,	1 death.

The American Association for the Study and Cure of Inebriety.—The twenty-seventh annual meeting will be held in Boston on Wednesday, December 8th, under the presidency of Dr. Mason, of Boston. In addition to the president's address, the programme includes the following papers: The Prognosis of Inebriety, by Dr. J. M. French, of Milford, Massachusetts; The Alcoholic Question in Medicine, by Dr. John F. Couch, of Somerville, Massachusetts; The Causation and Heredity in Inebriety, by Dr. Pool, of London, England; The Treatment of Inebriety by Baths, by Dr. C. H. Shepard, of Brooklyn; The Treatment of Delirium Tremens, by Dr. V. A. Ellsworth, of Boston; The Insanity of Inebriety, by Dr. T. D. Crothers, of Hartford, Connecticut; The Use of Alcohol in Practical Medicines, by Dr. I. N. Quimby, of Jersey City; Some New Methods in the Treatment of Alcohol and Opium Addiction, by Dr. J. H. Kellogg, of Battle Creek, Michigan; and Some Recent Researches on the Action of Alcohol on Brain Cells, by Dr. Ira Van Gieson, of New York.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Obstetrics and Gynæcology on Tuesday evening, the 23d inst., Dr. M. A. Crockett was to read a paper entitled The Diagnosis and Treatment of Carcinoma of the Cervix, and Dr. Earl P. Lathrop and Dr. Siansin Fronczak were to report cases and present specimens.

The Chicago Pathological Society.—The annual address before the society will be delivered on Friday evening, December 3d, by Surgeon-General George M. Sternberg, of the army, on Yellow Fever, its Ætiology and Pathology.

Changes of Address.—Dr. S. B. Allen, to No. 55 East Eighty-sixth Street, New York; Dr. R. G. Eaton, to No. 264 Maple Street, Holyoke, Massachusetts; Dr. Ralph Opdyke, to No. 63 West One Hundred and Seventeenth Street, New York; Dr. H. A. Rogers, to No. 1443 Lexington Avenue.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 14 to November 20, 1897:*

EBERT, R. G., Captain and Assistant Surgeon, is granted leave of absence for one month.

JOHNSON, RICHARD W., Captain and Assistant Surgeon, is relieved from duty at Fort Logan, Colorado, and ordered to Fort D. A. Russell, Wyoming, for duty.

MIDDLETON, J. V. D., Lieutenant Colonel and Deputy Surgeon General, is granted one month's extension to present leave of absence.

WATERS, WILLIAM E., Lieutenant Colonel and Deputy Surgeon General. By direction of the President, his retirement from active service is announced.

WOODRUFF, CHARLES E., Captain and Assistant Surgeon, will, upon the abandonment of Fort Custer, Montana, proceed to Jackson Barracks, Louisiana, and report for duty at that post to relieve SHANNON, WILLIAM C., Major and Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending November 20, 1897:*

BAILEY, T. B., Passed Assistant Surgeon. Detached from the U. S. Steamer Yorktown and ordered home with two months' leave.

GROVE, W. B., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, on reporting of relief, and ordered to the U. S. Steamer Oregon.

HERNDON, C. G., Surgeon. Detached from the Bureau of Medicine and Surgery and placed on waiting orders.

THOMPSON, J. C., Assistant Surgeon. Detached from the Naval Laboratory, Brooklyn, and ordered to the Naval Hospital, Mare Island, California.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending November 18, 1897.*

SAWTELLE, H. W., Surgeon. To rejoin station at New Orleans, La., *via* Washington, D. C. November 17, 1897.

WHITE, J. H., Passed Assistant Surgeon. To rejoin station at New York upon completion of duties at New Orleans, La. November 16, 1897.

PETTUS, W. J., Passed Assistant Surgeon. Granted leave of absence for one month from December 14, 1897, with permission to go beyond sea. November 13, 1897.

Society Meetings for the Coming Week:

TUESDAY, *November 30th:* Boston Society of Medical Sciences (private).

WEDNESDAY, *December 1st:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond;

Springfield, Massachusetts, Medical Club (private); Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

THURSDAY, *December 2d:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *December 3d:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *December 4th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Born.

BAUMGARTNER.—In St. Louis, on Monday, November 8th, to Dr. and Mrs. C. Baumgartner, a daughter.

Married.

BOWERMAN—PECK.—In Canandaigua, N. Y., on Wednesday, November 17th, Dr. Edwin A. Bowerman, of Buffalo, and Miss Onnolee B. Peck.

EBERHARDT—BRESLER.—In Manitowoc, Wisconsin, on Saturday, November 20th, Dr. Waldemar Eberhardt, of Chicago, and Miss Clara Bresler.

HOLDEN—WILSON.—In Brooklyn, on Wednesday, November 17th, Dr. Frederick C. Holden and Miss Maud Wilson.

THOMAS—FOOTE.—In Augusta, Maine, on Wednesday, November 17th, Dr. Austin Thomas, of Unity, Maine, and Mrs. Mary Sawyer Foote.

Died.

MOONEY.—In St. Louis, Missouri, on Monday, November 8th, Dr. Fletcher D. Mooney, aged forty-one years.

Book Notices.

A Manual of Legal Medicine for the Use of Practitioners and Students of Medicine and Law. By JUSTIN HEROLD, A. M., M. D., formerly Coroner's Physician of New York City and County, etc. Philadelphia: J. B. Lippincott Company, 1897. Pp. xv–11 to 678. [Price, $4.]

ELABORATION of detail has been the keynote of the more recent works on medical jurisprudence. But this elaboration has resulted in portly volumes that are calculated to awe and repel the student. Consequently the author of this volume has sought to prepare a work that should embrace the essential information of the elaborate and classic works together with such original material as may elucidate the subject under consideration and condense it "into a comparatively small, but not too scant, space." He states in his preface that he has inserted everything that is practical and useful, and dispensed with all idle and superfluous questions which are still *sub judice,* and he is to be congratulated that his efforts have attained the acme of his intention.

The work is divided into two sections, the first part being devoted to toxicology and the second to forensic medicine. The section devoted to toxicology reviews the essential features of the poisons, and the symptoms, treatment, lethal dose, and post-mortem appearances which pertain to their action. There is quite a good chapter on ptomaines, and there are some very pertinent remarks on embalming.

In the section on forensic medicine the chapters on hair and fibres and on the examination of blood are quite practical. A chapter is devoted to the medico-legal aspects of electricity, with special reference to the infliction of the death penalty by that agent. The author evidently believes that some better method of executing criminals should be devised.

The chapter on criminal abortion includes the excellent opinion given by the counsel of the Medical Society of the County of New York on the questions in regard to the duty of a physician to inform the officers of the law that an abortion or miscarriage has been produced or attempted illegally, and whether the physician renders himself a *particeps criminis* under the law if this information is not forthcoming.

In an appendix are *résumés* of the crimes of Carlyle W. Harris, Dr. Meyer, Holmes, and Dr. Robert W. Buchanan.

The author has produced a practical work, based on American jurisprudence, and it is likely to find favor with both lawyers and physicians.

A Manual of Medical Jurisprudence. By ALFRED SWAINE TAYLOR, M. D., F. R. S. Revised and Edited by THOMAS STEVENSON, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. Twelfth American, edited with Citations and Additions from the Twelfth English Edition, by CLARK BELL, Esq., LL. D., President of the American International Medico-legal Congress of 1889, etc. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. xvi–17 to 832.

THE editor has taken advantage of this new edition to incorporate the more important data pertaining to medical jurisprudence that have appeared during the five years that have elapsed since the last edition of the work was published.

It seems to us that this would have been an appropriate time to omit those portions of chapter ii that relate to the English coroner's system, and to give somewhat more detailed information in regard to the coroner system in the United States. The editor has interpolated in this chapter a *résumé* of the question of breach of professional confidence as that matter was determined in the case of Kitson *vs.* Playfair, in which the indiscreet and unjustifiable revelations of the physician caused the jury to award such heavy damages.

In chapter xi the question of arsenic poisoning is illuminated by several pages of matter in regard to the notorious Maybrick case.

Chapter xv has been expanded by something more than a page of text in regard to ptomaines. The subject is considered far too briefly to be commensurate with its importance in toxicology.

There is a brief note on page 228 in regard to the absorption of strychnine after death, also on page 245 there is one in regard to Jürgen's test for aconite, and on page 256 there is one in regard to the fracture of glass that is characteristic of explosion—as of a lamp.

The chapter on the characteristics of wounds has an added section in regard to the means of determining whether right- or left-handedness exists.

The chapter on the examination of blood stains has been materially augmented by the incorporation of most of the data published by Professor M. C. White on the red blood-corpuscle.

Chapter xxxii has been enhanced by additional remarks on tattooing and on ignition of clothing due to close discharge of a revolver.

The chapters on lunacy contain considerable new material in relation to the use of mechanical restraint, on the burden of proof in insanity cases, and on criminal responsibility of the insane homicide.

The final chapter, on medico-legal surgery, is largely devoted to the constitution of the medical corps of the army and navy, the section of medico-legal surgery of the Medico-legal Society, the National Association of Railway Surgeons, the American Academy of Railway Surgeons, and the State Association of Railway Surgeons. The last page of the chapter is devoted to damage cases and the measure of damages. The greater portion of this chapter could most appropriately have been omitted.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XII. Mental Diseases, Childhood, and Old Age. New York: William Wood and Company, 1897. Pp. 3 to 849.

This volume is devoted to the consideration of diseases of the mind, of old age, and of childhood, and, singularly enough, is written entirely by European authors.

The first section is on insanity, and is by Dr. G. Fielding Blandford, of London. The author is fully conversant with his subject, and is evidently an appreciative pupil of that excellent alienist, Bevan Lewis. The article is written in an interesting style, and is one of the best we have met with.

Dr. Paul A. Sollier, of Paris, is the author of the article on idiocy. He makes a practical classification of this condition into three subdivisions, absolute idiocy, simple idiocy, and imbecility. The operation of resection of a portion of the skull for the relief of microcephalic idiocy is properly condemned, because the theory of sutural ossification on which it rested is false, and because the cranium is not enlarged by the operation and the inelastic dura mater prevents cerebral development. The author, very sensibly it seems to us, is opposed to the waste of effort expended in teaching the idiot reading, writing, drawing, arithmetic, geography, etc. As he truly says: "Unless what we know of cerebral physiology is false, it is very evident that an idiot in whom the third left frontal convolution is sclerosed can never talk; that another whose frontal lobes are tightly adherent to the pia mater will never be able to understand or remember anything; and that another in whom the motor zone is destroyed will never be able to make the movements which depend upon it." The article is essentially practical, and the author is to be congratulated on his excellent exposition of the subject.

Dr. Cesare Lombroso, of Turin, is the author of the paper on criminal anthropology. His disapproval of reformatories does not include such institutions as that at Elmira, which is deservedly renowned despite the attempt of sensational newspapers to discredit its effective work. This author agrees with Dr. H. C. Wood and advocates capital punishment "because, the basis of divine right once abrogated, there remains to human justice only that of social defense, and when this can not be accomplished by imprisonment alone, nothing remains but to eliminate the most dangerous elements. This is in fact the foundation theory of the perfecting of the human race by means of selection and the survival of the fittest."

The section on the diseases of old age is written by Dr. J. Boy-Teissier, of Marseilles. He reviews the modifications that senility produces in the economy and in the separate organs, and then considers the old man in health and in disease. He proposes that physiological evolutionary senile sclerosis should be called xerosis. The author believes that old age is essentially a diminution in the activity of metabolism, and he arranges his hygienic measures to meet this condition. Under therapeutic measures he commends the administration of testicular juice. The section is well written and of material value.

Dr. Jules Comby, of Paris, is the author of the section on diseases of children, except the infectious diseases and rhachitis. He has handled a rather extensive subject so as to dispose of the matter in very moderate space.

The text of this volume is fully on a par with that of the best of the preceding volumes of this series.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume XII. Mental Diseases, Childhood, and Old Age. New York: William Wood and Company, 1897. Pp. 3 to 849.

A Treatise on Gynæcology; Medical and Surgical. By S. Pozzi, M. D., Professeur agrégé à la Faculté de médecine de Paris, etc. Second American Edition. Translated from the Third French Edition under the Supervision of Brooks H. Wells, M. D., Adjunct Professor of Gynæcology at the New York Polyclinic, etc. With Six Hundred Illustrations. New York: William Wood and Company, 1897. Pp. xiv–936. [Price, $5.50.]

Text-book of Nervous Diseases. Being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A. M., M. D., Professor of Nervous and Mental Diseases in Bellevue Hospital Medical College, etc. Fourth Edition, revised and enlarged. With Two Hundred and Forty-six Illustrations. New York: William Wood and Company, 1897. Pp. xi–623. [Price, $3.50.]

Cutaneous Medicine. A Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M. D., Professor of Diseases of the Skin in the University of Pennsylvania, etc. Part II. Classification—Anæmias—Hyperæmias—Inflammations. Illustrated. London and Philadelphia: J. B. Lippincott Company, 1897. Pp. 223 and 494.

Wounds in War. The Mechanism of their Production and their Treatment. By Surgeon-Colonel W. F. Stevenson (Army Medical Staff), A. B., M. B., M. Ch. Dublin University, Professor of Military Surgery, Army Medical School, Netley. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xv–419.

Essentials of Bacteriology. Being a Concise and Systematic Introduction to the Study of Micro-organisms for the Use of Students and Practitioners. By M. V. Ball, M. D., Bacteriologist to St. Agnes's Hospital, Philadelphia. Third Edition, revised. With Eighty-one Illustrations, some in Colors, and Five Plates. Philadelphia: W. B. Saunders, 1897. Pp. xvi–17 to 218. [Price, $1.]

Stirpiculture; or the Improvement of Offspring through Wiser Generation. By M. L. Holbrook, M. D. New York: M. L. Holbrook & Co. London: L. N. Fowler & Co., 1897. Pp. 3 to 192. [Price, $1.]

The Living Substance as Such and as Organism. By Gwendolen Foulke Andrews (Mrs. Ethan Allen Andrews). Supplement to Journal of Morphology, Volume XII, No. 2. Boston: Ginn & Company, 1897. Pp. 176. [Price, $1.]

Note on the Wounded in Naval Battles between Japan and China during 1894–'95. With Some Considerations on Sanitary Conditions during the War. By S. Suzuki, M. R. C. S. Eng., L. R. C. P. Eng., Fleet-Surgeon, Imperial Japanese Navy, etc. Tokyo: Printed by the Kokubunsha, 1897. Pp. 44.

Lippincott's Pocket Medical Dictionary. Including the Pronunciation and Definition of Twenty Thousand of the Principal Terms used in Medicine and the Allied Sciences, together with Many Elaborate Tables. Edited by Ryland W. Greene, A. B., etc. Philadelphia: J. B. Lippincott Company, 1897. Pp. 5 to 421.

Le phénomene de l'agglutination des microbes et ses applications à la pathologie. (Le sérodiagnostic.) Par le Dr. Raoul Bensaude, Ancien interne des hôpitaux de Paris, etc. Paris: George Carré et C. Naud, 1897. Pp. 7 to 304.

Atlas der Syphilis und syphilisähnlichen Hautkrankheiten für Studirende und Aerzte. Von Dr. med. Martin Chotzen, Spezialarzt für Hautkrankheiten in Breslau. Heft I. Heft II. Hamburg und Leipzig: Leopold Voss, 1897. Pp. 29.

Transactions of the Medical Society of the State of West Virginia, held in Charleston, May 19, 20, and 21, 1897.

Transactions of the American Dermatological Association at its Twenty-first Annual Meeting held in Washington, D. C., May 4, 5, and 6, 1897.

The Vital Statistics of Massachusetts, 1856–'95. From the Twenty-eighth Annual Report of the State Board of Health of Massachusetts for 1896.

A Report of Intradural Spinal Tumor extending through the Foramen Magnum, compressing the Extreme Upper Portion of the Cord, and almost Completely Destroying it at the Third Cervical Segment. By J. T. Eskridge, M. D., of Denver. [Reprinted from the *Medical News.*]

The Pelvic Viscera in Relation to Micro-organisms in Health and in Disease. By J. C. Webster, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

Notes of a Case in which Marked Enlargement of the Liver, associated with Symptoms resembling those of Typhoid Fever, occurred in a Young Child. By A. D. Blackader, M. D., of Montreal. [Reprinted from the *Archives of Pœdiatrics.*]

Special Sanitariums for the Treatment of Disorders of the Stomach. By J. H. Kellogg, M. D., of Battle Creek, Mich. [Reprinted from *Modern Medicine.*]

Early Diagnosis and Mistaken Diagnosis in Cases of Tumor of the Breast. By Charles A. Powers, M. D., of Denver. [Reprinted from the *Medical News.*]

State Medicine up to the Present Time. By Franklin Staples, M. D., of Winona, Minnesota. [Reprinted from the *Journal of the American Medical Association.*]

Static Electricity. Current Diffuser with Rapid Vibrations. By H. S. Greeno, M. D., of Chicago. [Reprinted from the *Medical Standard.*]

New Inventions, etc.

A CONVENIENT AND INEXPENSIVE APPARATUS FOR THE SUPPLY OF STERILIZED WATER AT THE PROPER TEMPERATURE.

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The accompanying illustrations represent a water-sterilizing apparatus which I designed and have had in practical use for a year past. I believe that its simplicity and comparative cheapness render it worthy of description here. It filters, boils, and cools the water, the advantages of which are obvious.

Boiled water is always available, but during an operative clinic, when the demand has exceeded the supply, it is difficult to obtain sterilized water at a temperature ready for immediate use without considerable delay, or the chance contamination in the process of lowering the temperature of water which has been recently boiled. The temptation might even press itself upon an orderly—hardly upon a trained nurse—to temper the boiled by adding cold water from the faucet, and thus endanger the asepsis of an operation or entire clinic.

The apparatuses for a similar purpose which I have examined at a surgical supply store are so expensive as to make any institution, private or public, hesitate before purchasing, being in the neighborhood of six

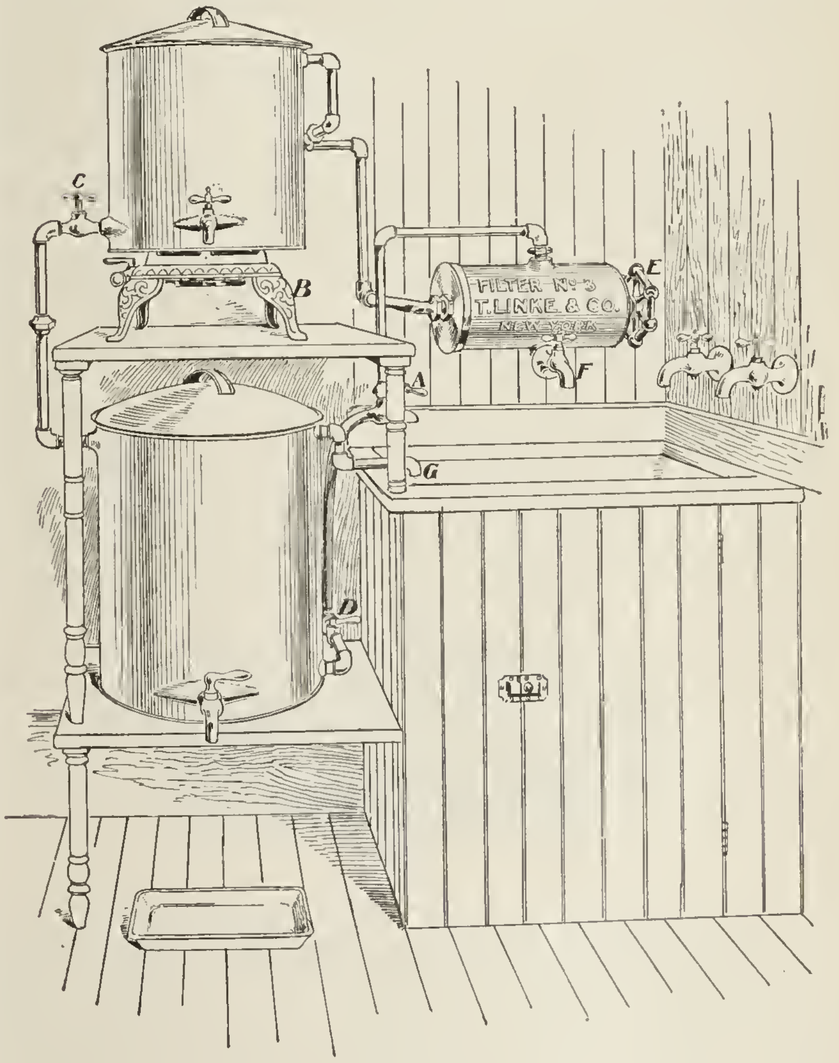


Fig. 1.

hundred dollars. The price of this outfit complete, put up, should range between fifty and seventy-five dollars, according to the size of the copper tanks.

In Fig. 1 the apparatus is shown *in situ*. The capacity of the upper tank is fifteen gallons; of the lower, twenty gallons. The operation of it is simple, and is conducted as follows: By turning the faucet at "A" the water supply is opened and the current allowed to pass through the filter into the upper tank, which may be filled up to ten gallons in about five minutes. This amount of water is boiled by means of the gas heater "B" in about thirty minutes.

By turning the cock at "C," the boiled water is allowed to run into the lower tank, and the supply in the upper is then replenished by again opening the cock at "A." It is unnecessary to turn off the heat when the boiled water is passed into the lower tank, as a sufficient quantity will be retained to protect the bottom.

By turning the cock at "D" a current of cold water is allowed to circulate through a coil of pipe (Fig. 2) within the lower tank, by means of which the entire contents is cooled to the temperature of the running water in about ten minutes.

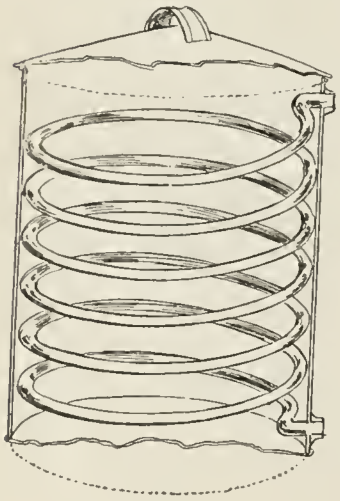


Fig. 2.

The second supply of water, which has in the meantime been renewed, is then boiled; hence ten gallons of hot and ten gallons of cold sterilized water are obtained in about sixty minutes, and by mixing the cold with the boiled water it may be obtained at a temperature ready for immediate use. This amount may be increased up to the full capacity of the apparatus, thirty-five gallons, by continuing to boil a fresh supply, and a larger amount by increasing the size of the tanks. The tanks are made of extra heavy copper, tin lined. The covers are made to fit closely to prevent the entrance of dust, and when removed allow the tanks to be readily cleaned.

The coil in the lower tank is of block tin; the interspaces are three inches.

The filter is constructed of natural stone, and in this particular design may be cleaned as often as required without uncoupling the plumbing. The wheel at "E" (Fig. 1) revolves the stone "B" (Fig. 3) against the spring scraper "A" (Fig. 3), in which manner the surface of the stone is thoroughly cleaned, and by turning on the water supply at "A" (Fig. 1) and opening the outlet at "F" (Fig. 1) the interior of the filter is thoroughly flushed and its surface rendered perfectly clean.

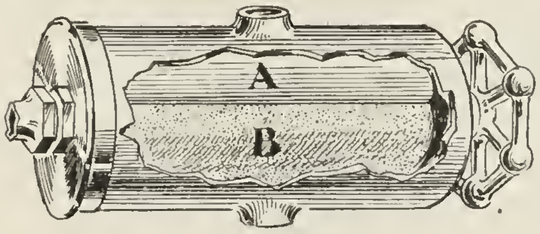


Fig. 3.

The length of time required to operate this apparatus is, of course, varied according to the amount of water pressure and the capacity of the gas heater used.

Miscellany.

A Form of Multiple Neuritis Prevalent in the West Indies.—In the November number of the *Practitioner* Dr. Henry Strachan describes in detail the most important symptoms of this disease, and discusses the probable origin of the poison which so severely attacks the peripheral nerves as follows: 1. *The inflammation of the nerves of the extremities, with the trophic changes resulting.* The first nerve attacked in the majority of cases is the ulnar. It becomes very tender on pressure, and may feel slightly enlarged at the elbow. The other main nerves in the extremities are attacked almost immediately after, and their terminal distribution (in the hand) can be mapped out by feeling (in the negro) the tiny herpetic vesicles which form and rarely coalesce into large bullæ; they soon dry and are then, in the black skin, easily seen, as each becomes a centre for desquamation. This desquamation, which is fine and branny, involves the whole of the palm, which becomes more and more deeply pigmented as the disease progresses. Should bullæ form and be neglected, small ulcers may result, but this is apparently rare. In the feet the thick epidermis of the soles of such patients as walk barefoot will come off in large flakes, and the soles also will become pigmented.

Sensation is never completely abolished; it may become blunted, and impulses may be delayed in transit and a very delicate touch not be felt, but this is in very advanced cases. Usually slight continued pressure on the nerve trunk will, however, cause more or less anæsthesia in the extremity, with "tingling" and "numbness" in the parts supplied. It is this "numbness and tingling," or "foot going to sleep," or "crampiness," which the patient first notices when he lies or sits in one position for a short time, and if he is of a superior grade of intelligence it leads him to seek advice; if he is not, or is careless, it is the gradually increasing impairment of vision which brings him to the doctor.

2. *The effect of the neuritis on the nerves of special sense*, and its results. The optic nerve affection is most frequently retrobulbar. Little is to be seen on ophthalmoscopic examination but some degree of hyperæmia of the disc and retina, but the acuteness of vision is severely affected, and there may be well-marked scotoma with micropsia. In one case, the author states, there was paralysis of the external rectus in each orbit, and in several cases he has seen the cornea involved in the trophic changes.

Recovery of sight is the rule; the scotoma grows smaller and finally disappears, and the micropsia passes away. It is noteworthy, says Dr. Strachan, that in some cases where the scotoma has been very marked there has been, on recurrence of the malady, or even when a patient is "run down" from overwork or fatigue, a slight return of the "spot," generally smaller, and not lasting so long a time as on the first attack, but in the same region; from which Dr. Strachan thinks the inference may be drawn that restoration of vision in the disturbed end-organs of the displaced fibrils in the optic nerve trunk may occur long before the displacing inflammatory material has been completely absorbed.

When there has been no scotoma, he says, the acuteness of vision for form gradually grows stronger until the power of sight normal to the patient is restored; though it will generally be found that a latent error of refraction, which was unnoticed by the patient before the attack, will now call for correction.

The author says he has not seen optic atrophy result from this form of neuritis.

The deafness presents no peculiar features, except its sudden onset and rapid increase in intensity. It is not present in a fairly large percentage of cases.

3. *Monoplegias.* These are not common, the most frequent being facial palsy. In one case there was double facial palsy; in one double palsy of external rectus. In one case, where the right brachial plexus was decidedly attacked, there was paresis of the right upper limb, which was only overcome after many months of daily treatment, local and general.

4. In a very grave case, with loss of power in the chest muscles, and when the innervation of the diaphragm and of the heart is seriously involved, the effect on respiration and on the heart's action is painful to witness, says Dr. Strachan, and leads to a fatal termination. Speech becomes difficult, the voice is high-pitched and whining, and often a word or two may be sounded on the inspiratory current of air.

5. *Mental condition.* Only in the gravest cases, when the patient is a mere helpless, wasted living thing, passing his excreta almost unconsciously, there may be delusions; and if he is not so far advanced as this, some feeble violence. Such cases, however, the author has seen only two or three times. Possibly, he says, they may be found in asylums.

6. *The condition of the muco-cutaneous orifices.* Redness and irritation of the eyelids and lips are often the first external signs noticed. It soon passes into a slight eczematous condition, especially at the corners of the mouth and round the margin of the nostrils, with fine, branny desquamation. A similar condition of the muco-cutaneous line of the prepuce is not uncommon. More rarely there is a similar condition of the vulva and anus. The lips and the inside of the mouth are hyperæmic, and there may be much loss of surface epithelium on the tongue.

7. The general hyperæmia due to dilated arterioles is well seen in early cases in the conjunctivæ, the palms of the hands, the soles of the feet, and the mouth, and the resulting heat and tingling are bitterly complained of by the patient. These parts, which are normally the least pigmented external portions of the negroes, become deeply pigmented as the disease progresses, and remain so after it has passed away. Of course the whole skin (as well as other organs, to be mentioned later) may become more deeply pigmented, but the change is most striking to the observer in the regions which are normally fairer than the rest. Then the color may vary from brown to intense black.

8. *Reflexes, etc.* An examination of the reflexes, superficial and deep, does not bring out any point peculiar to this form of neuritis as compared with others. The gait in walking might be called typically ataxic, but it is only when the muscles of the lower limbs are much wasted that the patient can not stand upright alone, with closed eyes, or turn sharply in his walk, or touch any given spot on his head or body with eyes closed—in short, co-ordination of his muscle actions appears to be good in proportion to the degree of perfection of muscle nutrition, the action of the muscles being short and jerky when wasting is present and the case an advanced one, any failure to carry out a desired action being the result of want of strength in the muscle itself and not of loss of central co-ordinating power.

9. The sexual functions seem to be affected only when widespread impairment of muscular action renders all movements difficult, or when the general condition of the patient has arrived at a state which causes him anxiety and distress.

10. Dr. Strachan states that he has seen very few *post-mortem examinations* of cases in which patients have died of this disease. The most noteworthy feature was pigmentation of the brain, spinal cord, and large nerve trunks. The liver and spleen were such as are usually found in cases of malarial poisoning.

11. The disease attacks both sexes, at any age, but is most common in youth and in adults. It appears to prevail most in districts on the seacoast and low-lying inland regions, but on this point he says he has no certain information to offer, as the majority of patients treated in the Public Hospital, Kingston, belong to that city and its immediate neighborhood.

12. *Treatment.* The treatment adopted in the Public Hospital and found to be of most service has been, during the early and acute stages, by rest in bed, nourishing food, gradually increasing in quantity and variety, and the internal administration of quinine and strychnine for a considerable period of time in moderate doses, frequently repeated, and often combined with small doses of iodide of potassium. The quinine has been given with the object of combating the malaria believed to be present, and the other drugs have been used with the view of stimulating nerve nutrition and absorption of inflammatory material in the affected nerves.

Massage and electrical stimulation are resorted to for wasted muscles, and active and passive movements of the extremities.

Complete change to a temperate or, if the patient can stand it, a cold climate is apparently one of the most powerful agents in the restoration of health, for continued residence in the patient's usual environment, though it may not prevent recovery, certainly retards it, and occasional recurrences of the malady may result.

13. As to the *poison* which, circulating in the blood of the affected person, causes this form of multiple neuritis, the author states that he has been led to think that it is the poison of malaria.

The fact that the disease attacks those who have resided in malarial regions, or have suffered from the milder and more chronic form of malarial poisoning, while persons who live always in non-malarious regions and have not contracted malaria appear to be rarely attacked, if ever; the fact that quinine is of value in the disease; the striking and rapid recovery when it is possible to give a patient complete change to a cold or temperate or non-malarious region; and the remarkable pigmentation of various organs, so suggestive of malaria, seem to the author to point to the possibility, if not probability, that the poison generated by malaria parasites may, when repeated from time to time and not eliminated promptly, cause this form of multiple neuritis.

Influenzal Pseudo-angina treated with very Large Doses of Trinitrin.—The following case is published in the *Dublin Journal of Medical Science* for November 1st, by Dr. Edmund Hobhouse, who thinks it may be of interest on account of the severity of the attacks and the enormous doses of trinitrin which can be used without producing any unpleasant effects: The patient was a highly neurotic woman, thirty-two years old, without any organic disease, but a great sufferer from neuralgia. In February, 1894, she had an attack of influenza, and a week afterward short, sharp pains began to attack her in the cardiac region, about an inch to the inner side of the cardiac apex and an inch below. At first they seemed to be brought on only by some exertion or sudden excitement, a quick movement, a fright, etc., and lasted a few minutes only, but soon they occurred every few nights and lasted longer, leaving the patient exhausted, breathless, and faint for an hour or two. She described the pain as being like the sensation of a screw driven into her side, and she found no relief except in pressing the side against some hard substance. In April the attacks increased greatly in severity and the patient's condition after them was serious; she was cold, clammy, almost pulseless, or with feeble irregular pulse; there was terrible dyspnœa, a veritable air hunger which nothing could appease; the patient would sit at an open window gasping for breath for an hour or two after the pain had entirely gone. During May, June, and part of July the attacks occurred on an average every two or three days, and, with few exceptions, were worse at night and lasted occasionally from 6 P. M. to 4 A. M.

About the end of July they began to intermit, and appeared somewhat more hysterical in character; during the autumn they gradually got less frequent, and practically disappeared before the end of the year.

Among other symptoms which were frequently present at one time or another were severe pain in the back of the head, just below the occipital protuberance, and pain, numbness, and rigidity of the left arm and hand, with fixation of the fingers in an extended position; at times the right arm and the legs were affected in the same way.

The pulse was generally about 88 during the attacks—thin, wiry, and regular, while the pain was severe—but intermittent and irregular during the last stage.

The author states that the only drugs that were of any service during the attacks were nitroglycerin, morphine, and hyoscine. He soon found that ordinary doses of the first produced no effect whatever, and he increased them gradually until five, eight, and even ten minims of the B. P. solution were given at a dose, and fully a drachm during an attack. The ordinary physiological effect was extraordinarily small; on the pulse it was noticeable after a minute or two, and remained for about half an hour, but the face scarcely flushed, and there was never any noticeable headache. Once or twice, when given at the onset, it seemed to abort an attack, and generally relieved the pain, except during the severest paroxysms, while the patient believed that the subsequent dyspnœa was lessened by it. There was no evidence that it produced the smallest ill effect, even in these enormous doses. Morphine had, when tried hypodermically for neuralgia, the author states, produced only vomiting, and given no relief, so he did not try it at first, but eventually gave it by the mouth. At first it relieved the pain greatly, but, at the end of three or four days, caused such severe vomiting after about half an hour as to bring all the pain back, so that its use was greatly restricted. Two thirds of a grain was the smallest effective dose. A hundredth or a fiftieth of a grain of hyoscine had considerable effect, though much less than morphine, but it caused no bad symptoms. The author did not like to press this somewhat uncertain and dangerous depressant in such a condition (or, for the same reason, the coal-tar compounds), but he thinks it possible that larger doses might have had an even greater effect. He tried oxygen inhalations, without any effect, during the stage of dyspnœa.

The amount of pressure which the patient craved for, and found relieved her, he states, was really almost incredible; to be effective it had to impinge on an area about two inches in diameter, just below and internal to the nipple. It was generally applied by the hands of two powerful relatives, and was so great that the hand placed next the patient's dress was completely paralyzed and numbed in a few minutes—it seemed almost impossible that the human thorax could stand it. It might be thought, perhaps, continues Dr. Hobhouse, that some of the after-symptoms were due to this or the other treatment employed, and it should be said, therefore, that all the symptoms were present, varying only in degree, in the earliest attacks, when the patient had no medical treatment, but instinctively applied pressure herself. It is interesting to note, he adds, that, while the attacks lasted, trigeminal neuralgia, to which the patient had been subject constantly for years, was entirely absent, but returned as she got better.

The drugs were all relinquished without an effort, and within a year the patient was in better health than she had been for years, and remains so.

Dr. Hobhouse thinks it is a grave and dangerous fallacy to regard these attacks as hysterical in character because many of them have occurred in neurotic individuals. He thinks it is impossible to say what the pathology of the condition is, but the most probable hypothesis is that which has been accepted by many—namely, that the influenza poison attacks the nerve centres in the bulb and upper cervical regions, and, acting paroxysmally, produces these various symptoms.

A Case of Tuberculosis of the Placenta.—In the November number of the *Scottish Medical and Surgical Journal* Mr. J. A. Kynoch states that some time ago he showed at the Forfarshire Medical Association the uterus and appendages from a pregnant woman who had died of acute tuberculosis, which showed the presence of tubercles on the placenta. The patient was twenty-eight years old, had been married four years, and had one child two years previous to her admission to the Infirmary. Her health, until six weeks previous to her coming under observation, had always been good. She complained of weakness, cough, and sore throat; the temperature was 102° F., and the pulse 108. There were some fine crepitations heard over both apices, which became more marked, and she died fourteen days after admission, with all the signs of acute tuberculosis.

At the post-mortem examination tuberculous nodules were found on the liver, lungs, and peritonæum. On removing the uterus it was found to correspond in size to a three months' pregnancy. Both Falloppian tubes were distended with caseous material—convoluted—bound down and firmly adherent to the sides of the uterus. Both fimbriated extremities were patulous, permitting of the escape of caseous material on slight pressure. On emptying the tubes, the inner surface was found ragged and ulcerated, and there was considerable thickening of the walls.

The placenta was attached to the anterior wall, and studded over the fœtal surface were numerous characteristic gray, non-caseating tubercles.

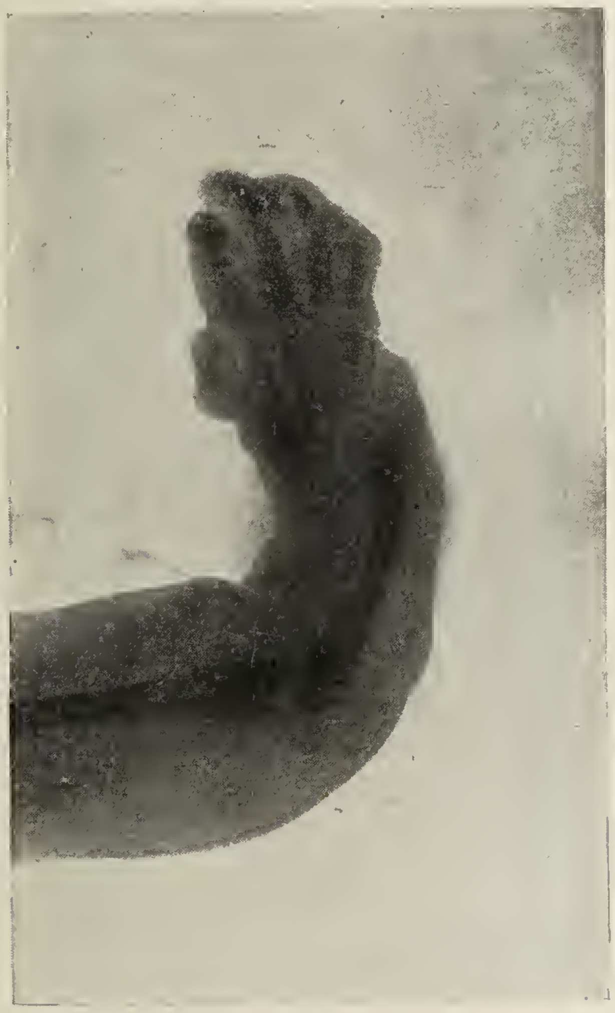
Each ovary contained a small cavity filled with semifluid caseous material, in which the presence (in small number) of tubercle bacilli was detected. There was no obvious tuberculous lesion found in the organs of the fœtus.

The author thinks the points of interest in the case are:

1. The primary seat of the disease. From the postmortem appearances this would seem to have been in the Falloppian tubes. Impregnation had probably occurred during the early stage of tuberculosis, and previous to the complete filling up of both tubes with caseous material. From the tubes the tuberculous process had spread upward to the ovaries, peritonæum, lungs, and liver, and also to the uterus and placenta, as shown by the abundant tubercles found on the fœtal surface of the latter.

2. As affording a probable explanation of the possibility of direct transmission of tuberculosis from mother to fœtus.

Congenital Absence of Certain Bones.—At a recent meeting of the Section in Orthopædic Surgery of the New York Academy of Medicine several examples were reported of deformities and disabilities due to congenital absence of certain bones. Dr. H. L. Taylor mentioned four cases—two of absence of the radius, one of abnormally small size of the radii, and one of absence of the ulna. The accompanying cut, for the electrotype of which we are indebted to the chairman of the section, Dr. A. B. Judson, shows a Röntgen-ray picture illustrative of one of the cases of congenital absence of the radius. Children with such deficiencies, Dr. Taylor remarked, were usually still-born or born prematurely; if born alive they seldom lived many weeks. There were, he said, about two hundred recorded cases of absence of the fibula and a hundred of absence of the radius; absence of the ulna was believed to be very rare.



Hepatic Complications of Typhoid Fever.—In the November number of the *Edinburgh Medical Journal* Dr. William Osler deals with the complications which arise in the course of typhoid fever, under the following headings: 1. The focal necroses. 2. Jaundice in the course of the disease. 3. Abscess. 4. Affections of the bile passages.

Concerning focal necroses, he says, these little bodies were described by Friedreich and Wagner, and have since been very carefully studied by a number of observers. They are known as the lymphoid nodules, and represent foci of necrosis of the liver cells. The clumps of typhoid bacilli appear to bear no definite relation to them. Sometimes, says Dr. Osler, in the necrotic area there are many multinuclear leucocytes which almost give the appearance, according to Handford, of a small miliary abscess or of lymphoid nodules. Necrotic areas may be produced experimentally by the injection of cultures of the typhoid bacillus into the mesenteric vein, and in the human subject the author thinks they are caused by the toxalbumins of the disease, similar to those which develop in diphtheria. So far as is known, he says, these focal necroses cause no symptoms, though it is quite possible that a widespread involvement of the liver lobules might cause an icterus gravis, which occasionally develops in typhoid fever, or, subsequently, in their fibrous transformation, lead to cirrhosis.

To demonstrate the extreme rarity of jaundice in typhoid fever, Dr. Osler states that among the first five hundred cases treated in his wards at the Johns Hopkins Hospital there was not a single instance. This, he says, has been the experience of most writers on the subject, Griesinger having noted ten cases among six hundred patients, and Liebermeister twenty-six in one thousand four hundred and twenty cases.

Dr. Osler groups the cases of jaundice in typhoid fever in four categories: 1. Catarrhal. 2. Toxic. 3. Those associated with abscess. 4. Those associated with gallstone and cholangeitis. According to Griesinger, catarrhal jaundice develops early, is quite slight and transitory, and has no influence on the course of the disease. Severe toxic jaundice is exceedingly rare in typhoid fever. Dr. Osler mentions a case reported by Sabourin in which the patient had very intense icterus, great prostration, and delirium, and with these symptoms frequent epistaxis and hæmorrhages from the intestines. The liver at the autopsy was found reduced in size, soft, and in a condition corresponding microscopically to acute yellow atrophy. In another case observed by the author himself the jaundice developed at the end of the second week with much delirium, and the patient died in a condition of toxæmia, with low temperature.

The third complication, abscess, comprises the following: 1. Suppurative pylephlebitis. 2. Solitary abscess. 3. Suppurative cholangeitis. 4. Abscess secondary to the complications of typhoid fever. The first, says Dr. Osler, is an excessively rare sequence of the disease. He states that he has seen one instance of it, and gives a brief account of the case. Lannois, he says, reported an interesting case following typhoid fever in which the Eberth bacillus was found in the pus. Ernst Romberg, of the Leipsic Clinic, mentions only one instance of suppurative pylephlebitis in eighty-eight fatal cases among six hundred and seventy-seven. Solitary abscess, continues the author, is very much rarer than pylephlebitis. He states that he has not seen one instance in nearly a hundred autopsies. Bertrand and Fontan refer very briefly to this association, and state that it is relatively more frequent in the typhoid fever of the tropics. Dr. Osler cites the Munich statistics, which give twelve cases out of two thousand post-mortems in typhoid fever. Other statistics also are cited by him to show the extreme rarity of this complication. Suppurative cholangeitis, the author goes on to say, may cause abscess of the liver, although the cases are very rare. Klebs, he says, has reported one in which the bile passages within the liver were dilated into large cylindrical cavities containing necrotic yellowish material. The common duct showed no trace of any change. Concerning abscess secondary to the complications of typhoid fever, he says, Romberg refers to an interesting group of cases in which the abscess was secondary to some of the inflammatory sequelæ of the disease. In one case liver abscess followed abscess of the right parotid; in another, two large liver abscesses were found in connection with perichondritis of the larynx in typhoid fever; in two others, the abscess followed peripheral bone lesions in the disease.

Concerning the fourth complication, affections of the bile passages, Dr. Osler states that these are much commoner, and discusses them under three headings—namely, the incidence of typhoid bacilli in the gall bladder in the bodies of persons dead of typhoid fever, the occurrence of acute cholecystitis and cholangeitis during and after typhoid fever, and the relation of typhoid fever to gallstones.

Concerning the typhoid bacilli in the gall bladder, Dr. Osler cites many instances in which pure cultures of typhoid bacilli were found. Chiari's studies in this direction, he says, have been perhaps the most important. He examined twenty-two cases, and found the typhoid bacilli in nineteen. In most instances the bacilli in the gall bladder were in large numbers.

Regarding cholecystitis and cholangeitis as complications and sequelæ of typhoid fever, Dr. Osler states that it is very evident that the bacilli may be in the gall bladder in numbers, and for a long period of time, without exciting any inflammation. Chiari's observations, he says, would warrant the conclusion that cholecystitis without any actual symptoms was by no means an uncommon event in the disease. He quotes from Murchison as follows: "The lining membrane of the gall bladder is very apt to become inflamed in enteric fever without producing any marked symptoms during life." Murchison mentions a case of perforating ulcer of the gall bladder. Other instances are also referred to by Dr. Osler.

In regard to the relation of typhoid fever to gallstones, Dr. Osler states that Bernheim seems to have been the first to suggest the possibility of a causal relationship. Bernheim states that he has three or four times seen attacks of colic in the course of typhoid fever in patients who had not before presented any similar trouble, and he thinks it possible that the typhoid fever causes an alteration or a stagnation in the bile which predisposes to lithiasis in susceptible persons, or the typhoidal gastro-intestinal catarrh may be propagated along the biliary passages. Dufort also, says Dr. Osler, noted the existence of a previous typhoid fever in nineteen subjects who presented gallstones. A number of cases have come under the author's observation, and a full account of each is given.

The infection of the bile passages with the typhoid bacilli, continues Dr. Osler, may be perfectly harmless—that is to say, the gall bladder may show no signs even of catarrh. In other instances intense cholecystitis may be excited; while in a third group the so-called lithogenous catarrh may develop from the irritation of the bacilli, leading to the formation of gallstones. It is quite possible, he says, that a patient with gallstones may be attacked with typhoid fever, and the presence of the calculi in the gall bladder may favor the settlement and growth of the bacilli, and it may not always be possible to determine which takes place first.

Dr. Osler gives a brief account of a remarkable case which he recently saw with Dr. Cushing, which, he says, illustrates a third possibility—namely, that the typhoid bacilli may, under certain circumstances, like the pneumococcus, be present without exciting the specific lesions of the disease. This case, so far as Dr. Osler knows, is unique, and will be published in full by Dr. Cushing, with the necessary details about the cultures.

Oxygenated Water in the Treatment of the Vomiting of Pregnancy.—It is stated in the *Journal de médecine de Paris* for November 7th that M. P. Gallois has obtained good results from the use of oxygenated water in the vomiting of pregnancy. It is employed as follows: A dessertspoonful of the water is put into a pint of water, which the patients take during meals, mixed with wine. According to the observations collected at the Charité, recovery takes place almost immediately; for the two following days there is no vomiting, but if the employment of this water during the meals is interrupted, the vomiting begins again.

It is a very simple treatment and one which has, up to the present time, shown itself constantly efficacious and without danger.

M. Gallois recommends the use of hydrogen dioxide, and not that of water charged with oxygen.

A Case of Purpura attributed to Benzene Poisoning.—The *Gazette hebdomadaire de médecine et de chirurgie* for November 4th contains a report of a recent meeting of the Société médicale des hôpitaux at which M. Le Noir and M. Claude related the case of a man who presented some rare hæmorrhagic spots on his body, but especially nasal and gingival hæmorrhages, and a hæmorrhagic pleurisy. He died suddenly in a condition of extreme anæmia. At the autopsy a pleural hæmorrhage was found; there were also myocardiac and endocardiac infarcts, ecchymoses in great abundance on the mucous membrane of the stomach and intestine, and, finally, two hæmorrhagic centres in the left optic layer and in the pons Varolii. The onset of the symptoms had been characterized by large subcutaneous ecchymotic patches. The patient had gradually become weakened and been obliged to give up his work.

Inquiry elicited the fact that the patient had, for a long time, been exposed for days at a time to benzene vapors. He had experienced a sort of intoxication, headache, nausea, and general malaise, which had still persisted after he had left the workroom. The authors were of the opinion that this somewhat peculiar form of purpura should be attributed to slow poisoning with benzene, which had at length caused a profound alteration of the blood and the blood-vessels.

Cardiac Neuroses.—At a recent meeting of the Italian Medical Society, a report of which is published in the *Indépendance médicale* for November 3d, Dr. Silva stated that he had made a special study of paroxysmal tachycardia and bradycardia. The former, he said, was developed especially at maturity, without distinction as to sex, under the influence of great emotion or from excessive mental and physical exertion. It was manifested by sudden attacks; vertigo, buzzing in the ears, and contractions of the neck and of the epigastrium. The heart beats were accelerated, and the number sometimes reached two hundred and fifty and even three hundred pulsations. If the thoracic region was examined at the time of an attack, an undulatory trembling would be perceived near the cardiac region, and auscultation would reveal a fœtal rhythm of the beats. The cardiac sounds were so accelerated that it was scarcely possible to distinguish the different periods. Sometimes, however, a systolic souffle could be perceived, which disappeared after the attack. The pulse was small and the face pale. In addition to the vertigo, there were delirium, insomnia, and oliguria, but there was no fever. Mydriasis or meiosis of the eyes was observed.

It was not possible, said Dr. Silva, to determine the certain cause of these attacks, which manifested themselves without any apparent cause and lasted from a few minutes to several hours. They became grave when they exceeded the latter duration and terminated then in death during an asystolic attack. More frequently the attack was terminated suddenly at the end of a few hours by polyuria and profuse sweating, when the patient recovered. Attacks of tachycardia might follow each other at intervals of a few days, or there might be very long respites.

The diagnosis, said Dr. Silva, was established by the abruptness of the paroxysms, which were not accompanied by sounds of organic lesions of the heart. This abruptness of the symptoms, which broke out and disappeared suddenly without leaving behind them any alteration in the general health, was also a guide to the clinician in distinguishing tachycardia from true endocarditis; and in angina pectoris arrhythmia, which was generally absent in tachycardia, was present.

Regarding the pathogeny of this affection, Dr. Silva said that many theories had been advanced. According to certain authors, it was an excitation of the great sympathetic; according to others, it was, on the contrary, an ephemeral paralysis of the pneumogastric nerve which caused the attack. Debove and Courtois-Suffit thought it was a bulbar neurosis; Fräntzel thought it was an undiscovered lesion of the myocardium. The speaker thought that the beginning of the attack depended upon the pneumogastric nerve, and that later this attack was kept up by the poisons produced by the excessive work of the heart.

Regarding bradycardia, or the slow pulse of Charcot, the author continued, this syndrome was manifested especially in old persons. The patient was attacked suddenly with malaise, the face became pale, and he fell to the ground in a condition of trembling and profuse sweating. The pulse slackened and did not reach more than from seven to ten beats. Soon the patient recovered consciousness himself, and all the alarming symptoms disappeared at the end of a few minutes. The attacks might break out without any apparent cause or after emotion, anger, etc. The patient might succumb after the first attack. More frequently the attacks occurred every two weeks or every month; in the interval the patient, who might live many years, was very well.

Dr. Silva stated that the diagnosis of bradycardia was very easy and the prognosis very grave.

Charcot and Caracretti had thought it was a circulatory or functional anatomical lesion of innervation, but Dr. Silva thought, on the contrary, that bradycardia depended sometimes upon a lesion of the centre of the pneumogastric nerve, sometimes upon arteriosclerosis, and at other times upon a lesion of the myocardium.

The two affections, he thought, should be treated in the same way—that is, with hydrotherapy, electricity, thoracic massage, and climatic treatment.

Gastric Secretion during Fasting.—The *Presse médicale* for November 6th publishes a report of a recent meeting of the Society of Russian Physicians of St. Petersburg at which Dr. Paoloff stated, referring to an experiment practised upon a dog, that other experiments had shown that this arrest of the secretion depended especially on the dehydration of the organism, for it was sufficient to introduce into a dog's stomach or rectum some distilled water in order that the gastric secretion should be as abundant as on the first day of the fast. In the experiment referred to the secretion had gone on diminishing day by day and had been arrested on the ninth day. Insufficiency of chlorides was the cause, and it sufficed to introduce into the organism of an animal a physiological solution of sea salt instead of distilled water in order to restore the secretion in as great abundance as on the first day of the fast. In the experiment alluded to the author had observed that when the animal took water and sodium chloride the secretion was maintained during seventeen hours.

During these experiments the acidity of the gastric juice had remained the same, even when, owing to the insufficiency of the chlorides, the secretion had not been very abundant; it had been the same regarding the richness of the gastric juice in ferments. Considering the rather large quantity of the gastric juice secreted in seventeen hours (about three pints), it was not probable that this fact was due to the existence of a reserve of the ferments. Dr. Paoloff explained it rather as a sort of struggle for life against the viscera, by virtue of which the stomach monopolized the substances of which it had need at the expense of the other organs.

In addition, the author had remarked the close relation of the gastric juice to the appetite. This had disappeared from the time the secretion had become exhausted. Another interesting fact was that when the secretion had been less abundant—although the gastric juice had been sufficiently energetic—the dog's appetite had become capricious; the animal had refused meat and had resolutely eaten bread. Now, said Dr. Paoloff, it was precisely for the digestion of bread that only a small quantity of gastric juice was needed, but it should be of a very active nature.

The Influence of Cold in the Development of Different Forms of Angina.—It is generally admitted, says M. M. P. Busquet, in the *Gazette hebdomadaire de médecine et de chirurgie* for October 24th, that the ætiological factor which contributes most powerfully to the development of the different forms of angina is cold, whether it is simple amygdalitis or angina with non-diphtheritic false membranes. Sallard, for example, distinctly says: "The common daily causative agent is cold." According to many authors, it not only is the predisposing causative agent (secondary cause), but may in itself determine the appearance of phlegmasias localized in the throat (primary cause).

M. Busquet states that he has been able recently to collect a series of observations which seem to him as valuable as a veritable experimental fact, from which he concludes that the real ætiological importance of cold should be placed in the background by restoring to the infectious agents the primordial rôle.

On the 1st of April last a company of the Fifty-seventh Regiment of Infantry, of about a hundred men, left Bordeaux and went into camp at Saint-Médard, where it was lodged in a brick barrack. This building was provided with a floor and covered with a wooden roof protected with tiles. It had recently been disinfected with a very concentrated solution of chlorinated lime; the floor, particularly, had been thoroughly washed with the disinfecting liquid. From the 1st to the 21st of April there were three cases of angina which were nearly apyretic (double amygdalitis).

On the 22d of April seven other companies and the section were also conveyed to the same camp, where they were to remain a month. All the men were lodged in tents—sixteen in one tent. At this time the nights were quite cold and the temperature was sharp enough to make the distribution of extra covering necessary. But the men could not sleep, and they were obliged to walk rapidly and stamp their feet in order to keep warm.

A curious and truly remarkable fact, says the author, was that, while all the companies exposed to the cold in the tents furnished but an insignificant number of cases of angina, that in the barracks presented eleven cases. Among these cases five were of angina with false membrane, and six acute simple or double angina. All were benign and the affection lasted but a few days only. In the beginning there were general lassitude with pains in the limbs and fever, which persisted for a day or two. Sometimes the pultaceous deposit was thin and of a pure white color; sometimes it was produced only on the tonsils, under the form of a pulpy coating, slightly resistant and of a dirty white color. In nearly all the cases there was cervical or submaxillary adenopathy, which disappeared after several days. Two of the men were sent to the infirmary, as the angina was of a suspicious nature; they also recovered rapidly without specific symptoms. As no bacteriological examination was made, it is impossible, the author says, to state to which ætiological variety these cases of angina belong.

Concerning the cause of these cases, M. Busquet thinks that it can not have been the action of the cold or that of a particular kind of work which might depress the men and render them more susceptible, for the service was the same for all the companies. Gradual contagion from man to man may be suspected, he says. After the company returned to Bordeaux and again occupied its usual quarters, from the 20th of May to the 25th of June, there were only three new cases of angina, and M. Busquet thinks it is difficult to understand under what influences this contagion from one to the other should have ceased suddenly after the arrival at Bordeaux, the division of squads remaining exactly the same.

Another ætiological factor, according to the author, seems to have been the dust from the boards, and this, he thinks, must have contributed to the infection. The floor and the base of the walls of the barracks had been rendered partly aseptic by the solution of chlorinated lime, and during the first few days only a few men were taken sick, but at the end of twenty-one days, after a further contamination by means of dust brought in from outdoors, from the clothing, and especially from the sputa, angina developed. Evidently, says M. Busquet, a progressive growth was produced in the soil; the particles of dust were thrown into the atmosphere by sweeping or by currents of air and drawn into the nasal fossæ by respiration.

M. Busquet states that he gathered some of the dust from the barracks and put it into sterilized tubes containing sterilized distilled water, and after agitation made a direct examination. The author was struck with the considerable number of micrococci that were found, including several chains of streptococci and undetermined bacilli. Although M. Busquet does not attribute a great value to this somewhat hasty examination, yet he considers it of a certain importance on account of the presence of the streptococci in the dust and the constant frequency of streptococcic angina in the men.

He is of the opinion that this dust was a direct or indirect efficient cause of the infection, the cold, under these circumstances, having had only a very slight influence. Either the action of the pathogenic agents was manifested directly or they only influenced the latent and, as it were, normal inhabitants of the mouth by their virulence.

Accidents caused by Theobromine.—At a recent meeting of the Société de thérapeutique, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie*, M. Huchard stated that he considered theobromine the most powerful diuretic known; it was particularly the medicament to be preferred in many of the forms of asystole in old persons. It was nearly always well tolerated and accomplished its therapeutic rôle in doses averaging from twenty-three to thirty grains, which amount M. Huchard thought it was useless to exceed. Occasionally, symptoms supervened, the most frequent being a cephalalgia so intense and painful that the use of the drug had to be suspended; or else it produced nausea, vomiting, or symptoms of cerebral excitation.

M. Huchard thought it might be a question of individual intolerance, which was so difficult to explain; on the other hand, many of the accidents observed might be due to the impurity of the drug, for at the hospital, where the theobromine used was very pure, according to M. Huchard, accidents were exceptional; while they were more frequent in private practice and more frequent still in certain cities, where they were reproduced in series among different patients.

M. Patein thought that the most important physical properties from this point of view were: 1. The general characteristic appearance of the theobromine crystals. 2. The constancy of the point of fusion. 3. The solubility of theobromine, not in water, which dissolved it very slightly, or in alcohol, but in an alkalinized water, in which solution took place very well.

M. Le Gendre was of the opinion that, ordinarily, it was not the nature of theobromine that caused the accidents, but rather the idiosyncrasies of the subjects. As an example of this he stated that in one hospital he had seen certain patients present a comparative or absolute intolerance for theobromine, while other patients, who had received on the same day similar doses of the same product, experienced no abnormal symptoms. M. Le Gendre had also had occasion to observe a similar fact in private practice. Two capsules of theobromine were administered simultaneously to two persons in the same family; in one of them it was well tolerated, while in the other it gave trouble.

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Lectures and Addresses.

THE FREQUENCY AND ÆTIOLOGY OF DIABETES MELLITUS,

WITH CLINICAL AND PATHOLOGICAL NOTES.*

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Lecture II.

At Professor Osler's request I have analyzed the cases of diabetes treated in the medical wards and in the medical section of the dispensary of the Johns Hopkins Hospital since its opening in May, 1889. Accepting the definition of von Noorden, that, to constitute diabetes mellitus, the form of sugar eliminated in the urine must be grape sugar, that it must be eliminated for weeks, months, or years, and that the excretion of sugar must take place after the ingestion of moderate amounts of carbohydrates, there have been in all sixty-nine such cases treated in the medical wards and medical section of the dispensary since May, 1889, a period of just eight years. Of these sixty-nine cases thirty-nine were admitted to the medical wards, the remaining thirty having been treated in the dispensary. During these eight years 45,636 medical cases have been treated in the wards and out-patient department, so that the diabetes cases comprise only 0.15 per cent. of all the medical cases. These figures show that diabetes constituted only a very small percentage of the diseases of a large number of those who applied for medical treatment. Having obtained permission to do so, I endeavored to ascertain the number of patients, suffering from diabetes as a complication, that had been admitted to the other departments of the hospital. Unfortunately, I was not able to obtain the desired information without entailing an enormous amount of tedious work, as the diabetic cases had not yet been classified separately in cross-cataloguing the diseases in these departments. The number of persons with diabetes admitted to the other departments of the hospital is, to be sure, comparatively small, and a certain percentage of these are included under our sixty-nine cases, as they are often transferred to the medical side either before or after the disease for which they have been admitted has been treated. In order to determine the proper percentage the diabetic cases constitute of the total cases treated in the hospital and dispensary, the number of these additional cases should be known. They are so few, however, that the percentage would not be materially influenced. Up to the present date 150,745 patients have been treated in all the departments of the hospital. We may then take it for granted that the sixty-nine cases comprise nearly all the cases of diabetes in these 150,745, or 0.04 per cent. of all the cases treated in the wards and dispensary.

Diabetes is much less prevalent in the United States than in European countries. According to the statistics of Saundby,* the mortality in the United States in 1870 was 837, or 2.1 to the 100,000 population; in 1880 1,443, or 2.8 to the 100,000 population. The population of the United States for 1890 was 62,622,250. The total number of deaths was 875,521, of which 2,407 were from diabetes, showing a death-rate of 3.8 to the 100,000. These statistics show that diabetes in this country is gradually on the increase. In Europe, on the other hand, the mortality ranges between five and nine to the 100,000. The census of 1891 gave 13.1 to the 100,000 population as the mortality from diabetes in the island of Malta, where the death-rate is extraordinarily high. In some of the larger European cities—Paris, for example—the death-rate has been gradually increasing during the last three or four decades, reaching fourteen to the 100,000 population in 1891. The death-rate from diabetes appears to be gradually increasing from year to year throughout the world.† The disease seems very prevalent in India, chiefly among the educated and learned classes. The Chinese are comparatively exempt. It is believed to be exceptionally rare among the African races. These statements show that there is a very unequal distribution of diabetes. Although there is a prevalent belief that persons living in the country are more exempt from diabetes than those living in cities, yet Saundby thinks that this apparent difference is possibly due to the fact that country statistics are less reliable than those from cities, and gives figures which show that for many of the counties of England, at least, this discrepancy does not exist.

Some races seem especially prone to diabetes. Hebrews are particularly susceptible, one fourth of Frerichs's cases being in the Semitic race. Professor Osler tells me that he has been much impressed with the frequency of this disease among them. Of the last sixteen cases which he has seen in private practice eight were in Hebrews. It is rare in negroes, and African and Mongolian races enjoy considerable immunity in their own countries. The infrequency of the disease in the colored race is instanced by the statement of Tyson, quoted by Saundby, that he has never seen a case in a negro in the United States, although he has heard of cases occurring. Now, however, Tyson, in his *Practice of*

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* Delivered before the Post-graduate Class of the Johns Hopkins University, May 25, 1897.

* *Lectures on Renal and Urinary Diseases*, 1896.

† Since this was written, Hare (*Medical News*, June 12, 1897, p. 785) has published statistics showing that the frequency of diabetes is on the increase. Quoting from Purdy on Diabetes, he points out that in thirty years—1850 to 1880—the mortality from diabetes in the United States increased 150 per cent. in every 100,000 deaths. Statistics are also given showing that there has been a gradual increase in the percentage of diabetic persons admitted into the Jefferson Medical College Hospital, as well as into the London and some of the German hospitals.

Medicine, 1896, says that the disease is rare in the negro race, but that he has seen several cases. Of the sixty-nine cases of diabetes treated in the Johns Hopkins Hospital, five were in negroes. In other words, 7.2 per cent. of our cases were in the colored race.

The disease is commoner in males than in females, the proportion being stated to be about three to two. This does not hold for diabetes in children, where the number of cases in girls exceeds that in boys. Of our cases, forty-two were in males and twenty-seven in females, giving a proportion of almost exactly three to two. I can find no statistics showing whether or not males and females are affected in the same ratio in the colored as in the white race. Our experience here has been that females are affected oftener than males, four out of the five cases in the negro race being in females.

Diabetes is essentially a disease of adults, being less common at the two extremes of life. Although it may occur at any age, it is most frequent from the third to the sixth decade. The following is the analysis of the sixty-nine cases according to decades:

1–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
0	4	3	16	16	20	10	0
0%	5·7%	4·3%	23·1%	23·1%	28·9%	14·4%	0%

For the purposes of comparison I have tabulated the percentages published by Frerichs, Seegen, and Pavy, all of whom had a much larger number of cases from which to calculate their percentages.

	1–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Frerichs..	1·0	7·0	10·0	18·0	25·0	26·0	11·0	....
Seegen...	0·5	3·0	16·0	16·0	24·0	30·0	10·0	. ..
Pavy....	0·5	4·1	7·1	16·4	24·9	30·7	13·3	2·49

A glance at the tables will show that the largest percentage of our cases, 28.9 per cent., occurred between the ages of fifty and sixty. This agrees closely with the percentages of Frerichs, Seegen, and Pavy, all of whom found the largest number of their cases in the fifth decade, their percentage being 26, 30, and 30.7 respectively. The maximum mortality from diabetes, as might be expected, occurs a few years later than the maximum of living cases. Schmidt and Pavy agree in finding the largest number of living persons with diabetes between the ages of forty and sixty, whereas the maximum mortality is from fifty-five to seventy-five years of age. This seems to accord with our clinical knowledge—namely, that elderly diabetics live a considerable time. Diabetes has been observed in nursing infants, but such cases are rare. When the disease occurs in children it is often the result of hereditary influences, as it is not uncommon to see several children of the same family affected. These cases generally run a very acute course and terminate fatally. When it appears for the first time in the prime of life or in old age, it generally occurs in short persons in whom obesity has existed for ten or twenty years. In such cases the disease is rarely severe. Obesity is undoubtedly an important predisposing cause of diabetes. A slight trace of sugar is not uncommon in very stout persons. This so-called lipogenic glycosuria is only occasionally followed by diabetes. Von Noorden has pointed out that there may be a "diabetogenous obesity," in which diabetes and obesity develop in early life, and that these cases are very unfavorable. There is a frequency of diabetes during the climacteric. Gout is also acknowledged to be an important predisposing cause. Many regard syphilis as an ætiological factor, and cases are recorded in which diabetes has been found associated with syphilitic disease of the cerebral arteries.

Cerebral complications occurring in the course of syphilis, as well as in other diseases, may give rise to a transitory glycosuria lasting only a few hours. These must not be confounded with cases of true diabetes. It is to be remembered, however, that such cases as Frerichs has pointed out may pass over into true diabetes, and many instances are on record where this transitory glycosuria has been followed years later by unmistakable diabetes mellitus. The following notes are abstracted from the history of a Chinaman with a definite syphilitic history, who was admitted to the Johns Hopkins Hospital in a comatose condition. The urine on his admission contained two per cent. of sugar, but was entirely free on subsequent examinations. The coma was believed to be due to the existence of cerebral syphilis.

D. A., a Chinaman, aged thirty-one years, was admitted to the Johns Hopkins Hospital, in Dr. Osler's service, on November 30, 1894, in an unconscious condition. After consciousness returned the following history was obtained:

Family History.—Unimportant.

Previous History.—Did not remember having been seriously ill before. Had lived in the United States thirteen years. Denies excess in drinking. Three or four years ago he had had a primary chancre, followed shortly afterward by a general skin eruption. He had never had an attack similar to the present one. Appetite had always been good; no excessive thirst.

Present Illness.—Patient was at work as usual on the morning of November 30th, the day of admission. He states that he first experienced a sensation of heat in the abdomen and chilly feelings. After this he knew nothing until he regained consciousness in the hospital, to which he was admitted at 2 P. M., November 30th.

On admission patient was unconscious. The eyes were open; marked conjugate deviation of eyes to the right and upward; pupils moderately dilated; slight conjunctival reflex. There was at first but little resistance to passive motion anywhere. Later he became slightly more conscious, groaned a little, and resisted markedly passive motion of the legs and arms. Reflexes were normal. Paid no attention to pricks of a pin. Pulse was feeble and irregular; respiration 20 to the minute, and later became typically Cheyne-Stokes in character. Temperature was 101.9°.

Heart, lungs, and abdomen were negative on examination.

Stomach contents tested for opium; none present.

On catheterism, four hundred and seventy-five cubic centimetres of clear, straw-yellow urine were obtained; acid; specific gravity was 1.016; trace of albumin; two per cent. of sugar present (polariscope). No casts. Two hours and a half after admission nine hundred cubic centimetres of sterilized normal salt solution were injected intravenously. There was no immediate effect, although the mental condition improved steadily during the night.

The following morning, December 1st, patient was conscious, but a little dull. From this time on there was steady improvement under increasing doses of potassium iodide. No sugar was found in the urine after the first specimen examined, showing that the glycosuria was merely transitory. The patient was discharged on December 9th quite well.

This case is a good example of a transitory glycosuria occurring in the course of a disease accompanied by cerebral complications. As the case did not fulfill the requirements laid down by von Noorden to constitute true diabetes, it is not included as one of the series of sixty-nine cases.

It is still doubtful what influence malaria has as an ætiological factor in diabetes. Burdel thinks that glycosuria occurs very commonly in malarial infections. Calmette supports this view, remarking that while acute malarial infections are sometimes attended by transitory glycosuria, severe malarial cachexias are not infrequently the cause of true diabetes. The association between the history of malarial attacks and the onset of the symptoms of diabetes in the following case seems sufficiently close to warrant the reading of a brief abstract of the history of the case:

G. T., a man, aged thirty-two years, was admitted to the hospital March 14, 1895, complaining of intense thirst, passage of large quantities of urine, and loss of weight.

Family History.—Unimportant.

Personal History.—Had whooping-cough at ten years of age; pneumonia at eighteen years; measles at twenty-one. Lived in a malarial district, and had several attacks of malarial disease himself previous to August, 1894, when he had his last attack. No history of gonorrhœa or lues; has smoked and drank moderately.

Present Illness.—Began in August, 1893, during the course of an attack of malarial fever, the chills occurring every other day. While suffering from the chills patient began to have great thirst, followed by a gradual increase in the amount of urine voided. The appetite became ravenous and he began to lose flesh. These symptoms, associated with cramps in the legs, dry skin, and failing eyesight, had continued up to the time of admission. On admission the patient's urine contained two per cent. of sugar, and while in the hospital the percentage of sugar ranged between 1.5 and 3.5 per cent.

Another patient dated the onset of the symptoms of diabetes from her last pregnancy, and pregnancy has been considered by some as an ætiological factor. In certain instances the diabetic symptoms have been present only during the period of pregnancy. Mental shock, nervous strain, and worry appear to favor the occurrence of the disease. In the following case, shock was in all probability largely responsible for the acute onset of the diabetes, although the toxic effects of the smoke inhaled may have played a part as well.

J. B., a man, aged thirty-three years, was admitted to the Johns Hopkins Hospital on January 22, 1895, complaining of frequency of micturition, dry mouth, thirst, and pains in the limbs.

Family History.—Father died of carcinoma of the stomach. Mother living, but suffers from neuralgia. One brother has epilepsy. Paternal grandmother died of tuberculosis. No history of diabetes in the family.

Personal History.—Does not remember what infectious diseases he had as a child. Had typhoid fever at twenty-two. Otherwise he has always enjoyed good health. Denies gonorrhœa and lues.

Present History.—Patient was feeling well up to one night during the month of December, 1893. He does not remember the exact date. Patient was at this time confined in the Baltimore City Jail. On this particular night fire broke out in the jail and the patient was locked in his cell for from fifteen to twenty minutes after the fire broke out before he was rescued. In the mean time he had become almost suffocated with the smoke and remained unconscious all that night. On being released from jail the next day, he noticed for the first time great frequency in micturition and intense thirst. At first he attributed the intense thirst to the effect of the smoke, but later both the frequency of micturition and the intensity of the thirst gradually increased. He steadily became emaciated, and all the above-mentioned symptoms persisted up to the time of admission. When he entered the hospital he was suffering from severe shooting pains in the legs accompanied by numbness, probably due to the existence of a neuritis. The percentage of sugar on admission was 1.8 per cent. Patient died six days after admission to the hospital and thirteen months after the onset of the disease.

Intense application to business, overindulgence in food and drink, with a sedentary life, seem especially to predispose to the disease. Wealth and culture are said to increase the liability to the disease tenfold. The statistics for London and Berlin show that the number of cases in the upper ten thousand exceeds that in the lower hundred thousand inhabitants. The same occurs in India, where the disease is much more frequent in the educated upper classes than in the lower ignorant classes. Irritative lesions involving Bernard's diabetic centre in the floor of the fourth ventricle may cause diabetes. Organic disease of the brain or cord may occasion diabetes without involvement of the medulla. In only four of Frerichs's thirty cases of organic disease of the brain and cord associated with diabetes was the medulla involved.

Hereditary influence plays a more or less important part in the ætiology of diabetes, although some believe not to the same extent that obesity and gout do. There is but little unanimity in the views of various observers on this point. They agree, however, on two points—first, the marked prevalence of the disease among Hebrews, and, secondly, the comparatively frequent involvement of several children of the same family at an early age or even in infancy. It is commoner to obtain a history of brothers and sisters having diabetes than to find the disease occurring in parent and direct offspring. Cases are recorded where the grandfather was diabetic, the son gouty, and the grandson again diabetic—the so-called hereditary alternating diabetes, as von Noorden terms it. In only two of our sixty-nine cases was there a hereditary history of diabetes obtained. In one case a paternal uncle died of the disease, and in the second case the patient's mother died of diabetes at the age of twenty-nine.

Some observers hold that diabetes may be contracted by contagion. R. Schmitz was the first to draw attention to this possibility. Out of his series of two thousand three hundred and twenty cases he believed that twenty-six instances were the result of contagion. He cites several cases, in most instances married persons and usually the wives, where the disease was contracted after prolonged attendance on and being brought into the most intimate association with persons suffering from diabetes. In none of these cases could any hereditary influence be obtained, and in no instance was the last person attacked related by blood to the first patient affected. Schmitz is upheld in his view by the individual experiences of other observers, but his theory has been strenuously opposed by others who believe that the occurrence can be explained by the fact that persons living together for any length of time are naturally exposed to the same injurious influences.

Trousseau thought that the offspring from phthisical parents were specially liable to suffer from diabetes. A tuberculous history is certainly to be obtained in a very large percentage of the cases of diabetes. The disease has been known to begin during the course of or immediately after a number of acute febrile diseases, among which may be mentioned diphtheria, influenza, rheumatism, and enteric fever.

Glycosuria is not an uncommon occurrence in Graves's disease, but occasionally true diabetes mellitus may exist. It will be remembered from the previous lecture that exophthalmic goître is one of those diseases in which alimentary glycosuria is comparatively easily produced by the administration of from a hundred and fifty to two hundred grammes of sugar, showing that the metabolism of the carbohydrates appears to be in a condition of unstable equilibrium in this disease.

In recent years great interest has been attracted to the part the pancreas plays in the ætiology of diabetes. For more than a century, however, the possibility of lesions of the pancreas causing diabetes had been recognized. As early as 1788 Cawley recorded a case in which the pancreas was atrophied and contained calculi. Since then, numerous observers have described lesions of the pancreas in diabetes, but it was not until 1877 that Lancereaux, on the strength of numerous clinical and anatomical observations, described a special form under the name of *diabète pancréatique ou diabète maigre* associated with lesions of the gland. This variety of the disease was said to be characterized by a sudden onset, unusual malignancy of course, rapidly progressive emaciation, rapid loss of strength, and a special tendency to pulmonary tuberculosis as a complication. Baumel, in 1882, advanced the view that all cases of diabetes were due to the absence of a diastatic pancreatic ferment in the intestine, and was the first to contend that disease of the pancreas was the regular cause of diabetes. In support of his view he reported a case without emaciation (*diabète gras*) accompanying disease of the pancreatic gland. Lancereaux's observations, while exciting considerable interest at the time, were almost forgotten, when they were once more revived in 1889 by the discovery of Minkowski and von Mering, that permanent diabetes could be produced in animals by complete extirpation of the pancreas. It is now generally recognized that lesions of this gland are responsible for a certain percentage of the cases. Some believe that only those with wasting are due to pancreatic disease. Others go so far as to say that all cases of diabetes are due to involvement of the pancreas, maintaining that where no gross or microscopic changes are found a functional disturbance of the gland exists. In this latter connection it is of interest to note again that Lépine maintains that the pancreas produces a powerful glycolytic ferment which enters the blood and chyle and destroys a large part of the sugar before it reaches the liver, and that this ferment is absent or greatly diminished in animals deprived of the pancreas. More abundant evidence is required, however, before Lépine's view can be accepted. There are still others who think that there is no association between diabetes and lesions of the pancreas. Hansemann * analyzed the cases of diabetes which came to autopsy at the Berlin Pathological Institute during a period of ten years, and the results were as follows:

(1) Diabetes without pancreatic changes, eight cases.

(2) Diabetes without any information respecting the pancreas, six cases.

(3) Diabetes with pancreatic affections, forty cases.

(4) Pancreatic disease without diabetes, nineteen cases.

Of the forty cases in which pancreatic changes were found, thirty-six presented simple atrophy, three showed fibrous induration, and one was a case of pancreatic cyst. Williamson,† in an article on Diabetes Mellitus and Lesions of the Pancreas, states that he examined the pancreas in twenty-three consecutive cases of diabetes, making a microscopical examination in twenty-two cases. In only twelve of the twenty-three cases was the pancreas either normal or only atrophied in proportion to the general wasting. In order to show the variety of lesions of the pancreas that may occur in diabetes, I will quote from Williamson's article his analysis of a hundred cases of pancreatic lesions in diabetes which he collected from the literature.

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* *Zeitschrift für klin. Med.*, 1894, Bd. xxvi, p. 191.

† *Med. Chronicle*, May, 1897.

Atrophy of the pancreas (more or less marked)	39
Very marked atrophy, gland almost absent	3
Very marked atrophy, gland not recognized by the naked eye	2
Very marked atrophy, with cystic dilatation of duct	2
Very marked atrophy and induration	1
Calculi present, other conditions not stated	1
Marked fatty degeneration	10
Marked fatty degeneration with calculi	3
Fatty degeneration with increase of the connective tissue	1
Complete fatty degeneration and marked atrophy	1
Complete transformation of the pancreas into a fatty mass	2
Cystic disease	3
Large pancreatic cysts	3
Cyst of pancreas, with necrosis	1
Transformation into a firm mass of fibrous tissue, pancreatic tissue being almost absent	10
Marked cirrhosis	3
Cirrhotic and cystic pancreas	1
Calcified pancreas	1
Peripancreatitis and pancreatitis hæmorrhagica	2
Abscess	3
Cancer	8
	100

Of the thirty-nine persons with diabetes admitted to the medical wards of the Johns Hopkins Hospital fifteen have died. Autopsies were obtained in only seven of these cases. Through the kindness of Dr. Welch and Dr. Flexner I am able to state the condition of the pancreas in six of the seven fatal cases.

Case I.—H. K., a woman, aged thirty-three years. Emaciated. Highest percentage of sugar 4.6. Death from coma. No note as to the condition of the pancreas.

Case II.—T. M., a man, aged forty-seven years. Quite emaciated. The day previous to death the sugar was 3.75 per cent. Comatose before death.

Pancreas weighed ninety grammes. Nothing abnormal on macroscopical examination. Not examined microscopically.

Case III.—C. G., a girl, aged eleven years. Moderate emaciation. Diabetes of two weeks' duration. Highest percentage of sugar 2.25 per cent. Profound coma previous to death.

Pancreas weighed only twenty-five grammes. It was soft and more opaque-looking than normal. Microscopical examination not noted.

Case IV.—H. G., a man, aged forty-eight years. Only moderate emaciation. Repeated attacks of hæmatemesis previous to death. Percentage of sugar varied between 0.2 and five per cent.

Pancreas is stated to be small and of firm consistence. Shows small lobes due to gas accumulation. No microscopical examination noted. This was a very instructive case, and showed some very interesting features at autopsy. There was cirrhosis of the liver; thrombosis of the portal, splenic, and mesenteric veins; hæmorrhagic infarction of the intestine; gas cysts of the intestine; acute scrofibrinous and purulent peritonitis due to the *Bacillus aerogenes capsulatus;* subacute œdema and emphysema; acute splenic tumor; general development of the gas bacillus in the vessels.

Case V.—E. S., a woman, colored, aged thirty-five years. Emaciated. Sugar reached three per cent. Death preceded by profound coma.

The pancreas weighed seventy grammes. The following note was made regarding its appearance: "Impresses one as being decidedly flatter than normal and considerably firmer. On section is slightly yellower than normal."

Case VI.—U. B., a man, aged forty-six years. Quite emaciated. Sugar was never above 2.5 per cent. Entirely disappeared during first admission on complete restriction of the carbohydrates. Was readmitted six months after first admission, when the sugar was again 2.5 per cent. Was unconscious, but did not have typical diabetic coma previous to death.

Pancreas weighed about sixty grammes. Thin and quite firm.

Case VII.—K. W., a woman, aged fifty-six years. Emaciated. Sugar, 2.25 per cent. two days previous to death. Died in profound coma.

"Pancreas weighed fifty-eight grammes. Dimensions, 22 × 2 × 1 centimetres. Small and firm; elongated in form; thin and atrophic-looking, and quite firm in consistence. Pancreatic duct quite large in size."

To summarize, then, we find that in one case the condition of the pancreas was not noted. In only one of the six remaining cases was the pancreas apparently normal on macroscopical examination. The five remaining cases all showed variation from the normal. In one case (VII) the pancreas was undoubtedly atrophied. In three cases it was distinctly firmer than normal, and in another case it was small, soft, and opaque-looking. So that at least five of the seven cases showed changes in the pancreas which could be made out on macroscopical examination.

The Administration of Creosote by the Rectum.—The *Gazette hebdomadaire de médecine et de chirurgie* for October 14th gives Molle's formula as follows:

℞ Eucalyptol	10 parts;
Creosote	25 "
Tincture of benzoin	50 "
Copaiba	80 "
Oil of sweet almonds, enough to make	200 "

M. Thirty drops, added to a small enema of milk, may be used at first, and the amount increased gradually to one or two teaspoonfuls.

Original Communications.

ON THE USE OF STETHOSCOPIC PRESSURE IN PHYSICAL EXAMINATION OF THE HEART.

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The Physics of Stethoscopic Pressure.—Medical literature devotes rather scant space to elucidation of the physical conditions on which depend the origin and transmission of the sounds heard in auscultation of the normal chest. Since the following discussion can only be clear through a vivid conception of such conditions, it may be pardoned if this paper dwells at some length on the rudiments of physiological acoustics.

Vocal physiology teaches that, though the voice has its origin in the vocal cords, the sound produced by the vibration of these cords in an excised larynx would have little resemblance either in intensity or quality to the normal voice. The air chambers above and below the cords normally take up the vibrations of the latter and reproduce them with magnified intensity and a quality dependent on the size and shape of the cavities. The increase in intensity and the alteration in quality with which this sound emitted from the vocal cords is endowed depend upon the sympathetic resonance of the air in the chest and head and of the walls inclosing it. Bodies capable of sympathetic vibration are able to summate weak periodic impulses imparted to them, and a feeble sound may thus be transformed into one of great intensity. No better illustration of the mode of operation of sympathetic vibration could be offered than that of the heavy pendulum which is gradually set into wide oscillations by repeated light taps applied at proper intervals. The walls of the chest, not to mention the contained air and viscera, are capable of taking up and re-enforcing by sympathetic resonance vibrations occurring within the thorax, whether such vibrations have their origin in solid, liquid, or gaseous media. It is hardly necessary to refer to the significance of the vocal fremitus. In another place[*] I have shown reasons for believing that the selective resonance of the chest, like that of the chambers above the cords, may be altered by change in the tension of its walls and the shape of its cavity. Holden[†] describes a tube which, when applied to the chest, serves as a resonator for bronchial sounds, and brings them to the ear with increased intensity.

It is a fact of the greatest importance in physiological physics that sounds heard in auscultating the chest owe their intensity chiefly to the sympathetic resonance of the thoracic walls. But the sound waves as they reach the ear are not only the result of sympathetic resonance, but are also, to some extent, the outcome of direct conduction from the vibrating body. The chief essential for this conduction is that the sound-producing body shall come into direct contact with the chest wall. The elastic properties that make any medium a good conductor of vibrations are, in general, the same that determine its efficiency as a resonator; so that it is difficult to discriminate between sound elements which are simply conducted to the ear and those which owe their intensity to sympathetic vibration. The experiments described below seem to me to offer, however, a simple means of analyzing, more or less perfectly, the sounds emitted from any vibrating body, as the chest wall, into those which are directly conducted from their point of origin and those which result from that summation of vibrations which is the characteristic of resonance.

The observations referred to may be summarized in the following theorem: Pressure upon the vibrating surface, as of the stethoscope upon the chest wall, dampens or annuls the sympathetic vibrations, while it rather intensifies those brought to the ear by direct conduction.

In order to make this discussion clear it is necessary to keep in mind the mechanical operation of the instrument used in auscultation. The stethoscopes in common use are, in principle, all modifications of two forms, represented by the straight wooden tube devised by Laennec and the binaural instrument, which has the ear pieces joined to the bell or chest piece by flexible rubber tubes.[*] The former conducts sound both through its solid part and central air core, as was shown by C. J. B. Williams[†] more than fifty years ago, while the latter depends wholly upon the air columns of its flexible tubes for transmission of vibrations through them. Many binaural stethoscopes now in use attempt to combine the conducting features of a solid medium with the flexibility of the simpler instrument by inclosing a spiral wire within the rubber tubes. In this paper the instrument described as the "flexible stethoscope" is supposed to contain no such metallic conductor.[‡]

That the flexible stethoscope transmits sound by air conduction can easily be proved, as was demonstrated by Williams, by the silence which ensues if, while listening through it, the rubber tubes are plugged or clamped. But it is extraordinary how readily vibrations can be transmitted from the solid parts of the instrument to the air columns, or the reverse, for example, when the orifices of either the chest or head piece of the stethoscope are plugged, the ticking of a watch against which the bell is placed is still distinctly audible through the instrument. It may be proved that, on the one hand, vibrations of the solid bell are somewhat transmitted to the inclosed air, and, on the other, vibrations of the air columns of the flexible tubes are, to a slight degree, taken up by the solid head pieces of the instrument.

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[*] The relations of diaphragmatic to costal respiration, with particular reference to phonation. *Journal of Physiology*, vol. xi, p. 171.

[†] *Medical Record*, 1877, p. 257.

[*] D. M. Cammann. An Historical Sketch of the Stethoscope. *New York Medical Journal*, 1886, p. 465.

[†] *London Medical Gazette*, 1842; *Cyclopædia of Practical Medicine*, 1859, article Stethoscope.

[‡] A fault common to the ordinary binaural stethoscope is the imperfect manner in which the head pieces often fit the ears, for it is necessary in this instrument not only that the ear tips tightly plug the auditory meatus on each side, but that their perforations open freely into the auditory canal. I have derived great satisfaction from a stethoscope modified by cutting in two the metal head pieces, just above the attachment of the spring, and then reuniting the divided parts by a closely fitting swivel joint. The angle between the two head pieces can thus be made to vary within wide limits, and the ear tips may be perfectly fitted into the auditory canal in any position of the head. I am not aware that this modification has hitherto been employed.

The physical difference between the two chief forms of stethoscopes can be illustrated by simple experiments. Let a ticking watch be suspended in a cardboard or wooden box (such as an empty cigar box), so that the watch may touch that side of the box nearest the observer. If this surface be now explored with a flexible binaural stethoscope, the bell passing lightly over it, the ticking of the watch will be loudly heard over the whole of the area traversed. When, however, the bell of the stethoscope is applied to the surface with increasing pressure, the sound of the watch gradually dies out and usually totally fails except at those points which are opposite the place of contact with the timepiece. When the bell touches the surface opposite the watch no amount of pressure annuls the sound, though its quality is somewhat changed. In this way the area in contact with the unseen watch may be accurately mapped out. In the wooden box the sound is conducted with greater intensity from the point of origin along the grain of the wood, but in the cardboard receptacle conduction is equal in all directions. The same results are obtained when the mouth of the stethoscope bell is tightly covered by a sheet of rubber.

When, however, the straight wooden stethoscope is used instead of the binaural instrument, it is found that the sound of the watch is heard indifferently over the surface of the box whatever degree of pressure is used; the sound, in this case, is rather intensified by increase of pressure. An instructive modification of the experiment consists in applying the bell of the flexible stethoscope to the sounding board of a stringed instrument, such as the "autoharp" or zither. When a string is plucked the complex note is finely transmitted by the stethoscope when this is lightly applied; but when firm pressure is used the overtones are, for the most part, abolished, and the note becomes poorer in quality and apparently lower in pitch, because of the diminished intensity of the overtones. When the same experiment is tried with the wooden stethoscope, pressure does not cause diminution of the sound, but rather intensifies certain high overtones, and thus apparently raises the pitch of the note. Any thin board placed in contact with a tightly stretched wire takes up the vibrations according to its own properties of resonance; stethoscopic pressure with the flexible instrument applied to boards of different size, made to vibrate in this way, annuls now one, now another set of partial tones.

It is evident that the physical effect of firm pressure of the stethoscope bell is to dampen the vibrations of the surface included in the border of the bell, and, as it is this vibration which is the chief source of sound that is transmitted by the flexible binaural instrument, increase of pressure must greatly decrease the intensity of the note. And, also, it can hardly be doubted that it is the vibrations due to sympathetic resonance which are thus dampened, and not those depending on direct sound conduction. On the other hand, as in the experiment with the watch, when the bell is placed directly opposite the vibrating body and separated from it by good conducting material, the vibrations are still transmitted to the surface inclosed by the bell, irrespective of pressure.

The wooden stethoscope transmits sound chiefly by conduction through its solid part, directly from its applied rim, and increase of pressure only improves this conduction by making the contact better. The same statement holds good in the use of such instruments as are made to transmit sound through any solid medium applied to the vibrating surface. It might be supposed that compression of the bell of the stethoscope itself was an important factor in the modification of sound transmission by pressure. That this is not true is shown by the following experiment: Place the chest-end of a wooden stethoscope against the side of a box within which a watch is ticking; to the free end of the wooden stethoscope apply the bell of the flexible instrument; the sound of the watch is now distinctly heard through the binaural implement; increase the pressure between the wooden and the flexible stethoscopes while keeping uniform the contact between the former and the box wall; the intensity of the watch tick will be rather increased by improvement in the contact of the conducting surfaces. When, however, the wooden stethoscope is pressed more firmly upon the wall of the box the intensity of the sound diminishes, because the air cylinder of the wooden instrument no longer receives vibrations from the surface upon which it rests. That it is the dampening of the vibrations of the surface included within the bell of the stethoscope that causes the diminution of sound with pressure is also shown by the fact that when the bell, lightly applied to a vibrating surface, is surrounded by a wooden ring separated from its rim by a narrow space, pressure upon the circumscribing ring causes diminution in sound similar, if less marked, to that which follows the application of pressure directly to the bell of the stethoscope.

It is worth recording that the effects upon sound transmission of pressure with the flexible stethoscope are quite reversed when certain air-holding bodies intervene directly between the bell of the instrument and the sound-producing medium. Thus, when a ticking watch is covered by a feather pillow or by a thick layer of felt, it is found that the sound of the watch is transmitted more plainly the firmer the stethoscope is pressed upon those media.

This result depends upon the fact that vibrations are taken up and transmitted by homogeneous substances more readily than by those whose structure varies in density in different parts. The density and homogeneity of the felt or the feathers are increased by compression. This important principle is employed in deadening walls and floors in house construction. The fact has its clinical application also; for example, the sound of the fœtal heart is heard loudest, as a rule, not by light, but by deep pressure of the stethoscope upon the abdominal wall. The explanation of this clinical fact probably also depends upon the vibrating peculiarities of membranes as discussed below.

An interesting variation of the foregoing experiments is made in the following way: An ordinary rubber hot-water bag is filled nearly full of water and suspended from a horizontal rod. A ticking timepiece, such as a small clock, is fastened to the same rod so as to press upon one side of the water bag. When the bell of the flexible stethoscope is placed upon the opposite surface of the water bag the ticking of the timepiece is heard transmitted through the fluid. In this case deep pressure with the stethoscope, far from diminishing the sound, causes it to increase in loudness in a degree proportional to the depth of pressure. The reason for the magnified intensity of the sound with deeper pressure evidently is that the stethoscope bell is thus brought nearer to the source of sound. When the clock and water bag are suspended from the same rod without being in contact with one another, the sound of the ticking is conducted throughout the bag. When the bell of the flexible stethoscope is applied to the side of the bag under these conditions no amount of pressure makes a difference in the intensity of the sound as heard through the instrument. Practically the same result is obtained when the rubber water bag is empty or is distended with air. We thus find that when the bell of the flexible stethoscope is applied to a vibrating membrane, increase of pressure does not diminish the intensity of the sound, while, when the bell is pressed in the same way upon a vibrating solid body, the sound is diminished in a marked degree. The reason for the first result lies evidently in the peculiar elastic properties of membranes which, as pointed out by Helmholtz, have many proper tones inharmonic with the fundamental tone, and are readily thrown into vibration by notes of widely different pitch. This whole subject is one that deserves careful investigation at the hands of one trained in the physics of acoustics.

After the observations recorded above had been made, it was found that Malet * had already recognized and given an excellent synopsis of the physical differences between the two forms of stethoscopes, as regards the transmission of sound in its relation to pressure.

Clinical Application of Stethoscopic Pressure.—I can find no definite record of clinical observations upon the effects of varied pressure with the flexible stethoscope. The tyro in the use of the instrument is usually merely taught to apply the chest piece as lightly and evenly as possible to the surface. The only familiar use of varied pressure as an aid to diagnosis is in the discernment of the friction sounds of pericarditis, these sounds being usually intensified and brought nearer to the ear by pressure. Modification by pressure of the sounds heard in auscultation of the blood-vessels has long been a familiar matter. In a clinical lecture delivered more than forty years ago,* Sir W. Jenner summarized all the results of varied pressure as performed by the rigid wooden stethoscope. He demonstrated the pressure modification of the mitral-regurgitant murmur at the apex of the heart, and called attention to the dampening effect upon fremitus of pressure upon the thorax. He quotes a case of a patient having a flexible chest, in whom a pericardial friction murmur was annulled by pressure upon the base of the heart, due to the closer approximation of the rubbing surfaces; and he fully explained the origin of murmurs caused by pressure over the base of the heart as due to constriction of the pulmonary artery, which is favored by the three conditions—1, narrowness of the chest from before backward; 2, flexibility of the thoracic parietes; 3, anæmia.

Walshe † extensively studied the effect of pressure with the rigid stethoscope, and summarized the results of his observations under eighteen heads. He found the results of pressure to be more striking with the solid than with the hollow (wooden) stethoscope. In general, the murmur or sound was intensified and raised in pitch by increase of pressure. Walshe ‡ also mentions that the sound of the heart may be louder over a cavity at a distance from the organ than over the heart itself, on account of the cavernous resonance. Balfour # states that the distinctness of the heart sound "is probably as much due to the resonating qualities (thinness and flexibility) of the chest wall as to any particular state of the ventricle."

The clearest example of the effect of stethoscopic pressure in modifying sound in the normal chest is gained by placing the bell of the flexible instrument under the second right costal cartilage close to the sternum, the site of the transmitted sound of aortic closure. Pressure upon the chest piece in this region obliterates or greatly reduces the intensity of the sound.

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* The Physical Differences between Binaural and Uniaural Stethoscopes. *British Medical Journal*, 1882, ii, p. 774.

* *Medical Times and Gazette*, 1856, vol. xii, p. 207.

† *Diseases of the Heart*, 1862, p. 102.

‡ *Op. cit.*, p. 66.

# *The Senile Heart*, 1894, p. 54.

Essentially the same effect is produced whether the rim of the bell includes either cartilage or intercostal tissue, though the higher conducting power of the former makes pressure upon it somewhat less effective. Pressure applied in this way with the wooden stethoscope, or any instrument having a solid, rigid chest piece, such as the lately exploited "phonendoscope," does not essentially diminish the sound.

When the bell of the flexible stethoscope is transferred to the region of the apex of the heart, within the area of the cardiac impulse, the results from pressure are quite different. The sound of the heart is maintained, though altered in quality and diminished in intensity chiefly by the obliteration of resonance tones, whatever degree of pressure is used. The vibration from the ventricle is in this case conducted by direct contact through the wall of the chest. As might be expected, the sound, with pressure, is more fully maintained in expiratory than in inspiratory phases of respiration. In fact, when a deep breath is taken, causing a thick section of lung to separate the heart from the chest wall, or constantly in emphysematous subjects, the first sound is very imperfectly retained with pressure of the stethoscope, because the segment of lung is a poor conductor of vibrations.

Observations carried on during the last four years have convinced me that in stethoscopic pressure there is offered an important aid to clinical diagnosis. The results of this work, as thus far pursued, may be summarized under the following divisions: 1. The sound of the heart at the apex, when the organ impinges on the chest wall, is, as indicated above, made up of two elements—*a*, the vibration conducted directly through the chest wall, and *b*, the note produced by the sympathetic resonance of the thorax.

A very feeble ventricular contraction may give rise to a powerful resonance note when the fundamental tone of the thoracic wall is a harmonic of the first heart sound. On the other hand, the intensity of the vibrations which are conducted from the heart through the wall of the chest must be in fairly direct ratio to the energy of the ventricular systole. When the flexible stethoscope is applied with pressure, the factitious sound of resonance is largely eliminated, and the observer can estimate more exactly the real energy of ventricular contraction.

2. The outline of the heart is in many cases determined with greater certainty by stethoscopic pressure than by any other means.

I have now under observation a man with a greatly dilated heart and some emphysema of the lungs; the mitral valve has become relatively insufficient and the left border of the heart reaches to the anterior axillary line. When the stethoscope is lightly applied, a loud systolic murmur is heard over the whole of the left side; but when the instrument is pressed firmly upon the chest, the murmur and the first sound of the heart disappear so soon as the border of the ventricle is passed. In this case the stethoscope has measured, as it were, the difference in thickness between the thin layer of lung tissue which separates the heart from the chest wall and the thick body of the lung itself. In other words, within the cardiac area the vibrations of the contracting ventricles are, to a considerable extent, directly transmitted through the chest wall, while without the area the wall resounds chiefly by sympathetic resonance, and its vibrations are dampened by pressure. The results of pressure are particularly valuable in verifying the diagnosis of dilatation of the right side of the heart. Stethoscopic pressure applied to an area of dullness right of the sternum often shows the heart sounds to be retained there in a manner which experience teaches is indicative of physical contact or close approximation of heart and chest wall.

3. Under normal conditions, stethoscopic pressure applied to the second costal interspace, close to the right edge of the sternum, nearly or quite annuls the second sound of the heart; but when, on account of dilatation or aneurysm of the ascending aorta, this vessel comes in contact with the chest wall, the physical conditions favor to an unusual degree the direct conduction to the chest wall of vibrations arising from aortic semilunar closure, and the second sound persists strongly in its proper area though the stethoscope be applied with firm pressure. On a number of occasions I have made the diagnosis of aortic dilatation or aneurysm chiefly by virtue of this sign when other evidence was uncertain; in two instances the opportunity for autopsy was offered and the diagnosis was confirmed.

4. Stethoscopic pressure gives important aid in the estimate of the nature and place of origin of heart murmurs. It need hardly be premised that the following classification is provisional, and that a vastly greater number of cases than have been at my command must be studied before a permanent category is made.

(*a*) Powerful basic, systolic, "hæmic" murmurs, shown by autopsy to have no organic cause, disappear with stethoscopic pressure over the base of the heart. In this study must be excluded, of course, those murmurs from the pulmonary artery, discussed by Jenner, which are generated or increased by pressure applied in the phase of expiration. (*b*) Murmurs due to aortic stenosis, though strongly heard at the apex, disappear on the application of pressure at this region. I have been able, chiefly by this means, to correct a diagnosis which had been made of mitral insufficiency. (*c*) The systolic murmur having its origin in mitral incompetency is strongly and characteristically preserved with pressure at the apex, though it fails in its area of transmission in the left axilla. (*d*) In the few cases of mitral stenosis that have come under my observation since this work was begun the presystolic murmur has been well preserved by pressure at the apex. (*e*) The murmur of tricuspid regurgitation is preserved during pressure upon the area of its greatest intensity over the right ventricle. (*f*) The murmur of aortic regurgitation is, unless there is aneurysm or considerable dilatation of the ascending aorta, annulled by stethoscopic pressure under the second right cartilage, but is fairly well preserved at the apex. But when the mitral-regurgitant and aortic-regurgitant murmurs occur simultaneously, the former is much more perfectly retained than the latter, when the flexible stethoscope is applied with pressure at the apex.

5. Those numerous adventitious murmurs due to pulmonary friction, pressure upon the pulmonary arteries, etc., form special cases, each of which must be studied from several sides.

6. Whether stethoscopic pressure merits attention in the diagnosis of pulmonary lesions can not at present be answered. The sound of pleural friction is, like that of pericardial friction, rather intensified and brought nearer the ear by pressure, and the method has proved very useful in my hands in the analysis of those subcrepitant crackles so commonly found in pulmonary disease. But whether stethoscopic pressure is fully capable of analyzing pulmonary sounds into those which come from the pleura and those having a deeper origin must be left for special investigation.

Finally, it may be reiterated that it is the vibration of the disk of tissue included within the rim of the bell of the flexible stethoscope which is the direct source of the sound heard through this instrument. Increase of pressure upon the rim of the bell more or less completely isolates the included disk and reduces its sensitiveness for sympathetic vibration.

SOME EXPERIMENTAL INVESTIGATIONS AS TO THE EFFECTS OF THE ADMINISTRATION OF YEAST NUCLEIN UPON THE LEUCOCYTES.

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These experiments were begun more than two years ago with the approval of Dr. Victor C. Vaughan and carried on at his desire. When the work was first conceived it was hoped that the investigations might be carried out to very complete and far-reaching results; but a change of teaching work in the last year made it impossible for me to carry on the experiments according to the first plan, and I have therefore found myself unable to complete the work. Nevertheless, in spite of this incompleteness, I think that the observations made have sufficient value to warrant their publication, and I am, moreover, unwilling to lose a year's labor, which was by no means small. The observations themselves establish certain points and bring the work to a position from which others may proceed with advantage.

The various questions concerning nuclein, leucocytosis, and uric acid have during the last two years attracted so much attention that there is already an extensive literature upon the subject. It seems to me inexpedient in this paper to make a critical survey of this literature. The majority of the writers upon the subject assert that nuclein produces a leucocytosis, whether taken by the mouth or by injection. Horbaczewski emphasizes the relation of nuclein to leucocytosis and of the leucocytosis to an increased production of uric acid, and has formulated the theory that uric acid is formed from a nuclein produced by the leucocytes as one of the end products of their metabolism. By feeding nuclein to men and animals he demonstrated an increase of the uric acid eliminated, and since after a rich meat diet there is a temporary leucocytosis and a corresponding increase of the uric acid, he believes that the leucocytosis is produced by the nucleins of the food, and from the breaking down of an increased number of leucocytes comes the increase of uric acid.

It was the clearing up of these points, so far as yeast nuclein is concerned, that formed the object of these experiments. Dr. Vaughan had already demonstrated that leucocytosis could be produced in guinea-pigs by the injection of nuclein manufactured from yeast according to the method of his own. These experiments were carried on by Dr. Huber of the histological laboratory of this university. But Carter * in two animal experiments found that this same nuclein produced no leucocytosis. So far as I have been able to discover, these are the only experiments on record in which investigations as to the relation between yeast nuclein and the production of leucocytosis had been carried on, and from these cases my own experiments took departure. (See note.)

Numerous investigations have been made with brain, spleen, thyreoid, thymus, etc., nucleins, and in the majority of these it has been stated that a leucocytosis is usually produced by the administration of these substances. A survey of the records of these investigations leads me to the opinion that they are worthless so far as any exact knowledge of the condition of the leucocytes is concerned. Any conclusion based upon one estimation of the leucocytes daily is liable to complete error. That the daily variation of the number of leucocytes in the blood of normal persons is very great is a well-known fact to any one who has made many blood counts. To count the leucocytes in a patient on one day and find the number to be five thousand, and to find the count a week later to be eleven thousand, does not at all indicate the existence of a leucocytosis in that individual. The patient's daily range of leucocytes must be known before any conclusions can be drawn as to abnormities in his count. I have found that the normal individual variations are very great. One subject may have a daily range of five thousand to eight thousand, and never go below or above these limits; another's range may be eight thousand to fourteen thousand; another's six thousand to fifteen thousand; yet all of these subjects may be apparently of equal health and practically under the same environment. Especially does the occurrence of leucocytosis after meals differ with the individual; some never have any increase at this time, in others it may be more than double the lowest count made during the day. Therefore, I repeat that conclusions which are not based upon the individual's leucocyte range rather than upon isolated counts may be very misleading, and for this reason much of the work that has been done in this line is wholly unsatisfactory.

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* *University Med. Mag.*, October, 1894.

These investigations were begun with three points in view: The determination of the effect of nuclein taken into the body by injection or by the mouth upon the number of the leucocytes; the changes in the white corpuscles, and the relation of the amount of uric acid excreted to the nuclein injection and to the number of leucocytes. I soon found that the mere act of blood counting so frequently repeated took up all of the time that I could give to the work, and I was on that account forced to abandon the uric-acid estimations and confine myself to the first two questions.

It was thought best to make these experiments upon man rather than upon animals, and the experimental nature of the treatment was made clear to the normal individuals and to the hospital patients who consented to be made the subjects of the investigation. These individuals with the exception of two out-patients were placed under practically the same conditions of environment and nutrition. All other drugs were withheld during the period of observation. The patient's leucocyte range was first obtained by systematic counts made for several days (three to seven) before beginning the administration of the nuclein. These counts were made in definite time-relation to the taking of food, so that the counts would include the lowest and highest limits of the range. In the majority of the cases this was four times daily—an hour and a half after breakfast, just before dinner, an hour and a half after dinner, and just before supper; but in many of the cases the counts were made hourly from 8 A. M. to 7 P. M., the approximate hour being given.

The counts were made with the Thoma-Zeiss counter, using both the red-corpuscle pipette and the one for the leucocytes. Toison's fluid was used as a diluent for the red-corpuscle pipette, and a one-third-per-cent. solution of acetic acid used in the white-corpuscle pipette. Four entire fields were counted from each pipette. If the counts from the two drops did not vary greatly, an average was made of the two results; if there was any great discrepancy the count was repeated. The liability to error was therefore much lessened. When several patients were counted on the same day the blood was taken as nearly as possible at the same time and the approximate time given.

The specimens for microscopic examination were prepared by spreading the covers, drying in the air, and hardening in equal parts of ether and absolute alcohol. They were then stained with eosin and hæmatoxylin. The differential count was then made by counting a thousand leucocytes, and from this count the numerical proportion of the various forms was estimated.

The temperature of the patient was always taken at the time of the count, and the symptoms arising from the injection were carefully noted.

The nuclein solution used was that prepared by Parke, Davis, & Co. from yeast, according to the method of Dr. Vaughan, and was stated to be a one-per-cent. solution in a 0.26 per cent. KOH and a 0.6 per cent. NaCl solution. The injections were given with a large-barrel syringe having a long needle. This was plunged deep into the gluteals, the injection never being given subcutaneously, it having been found by experience that this method gave much less pain to the patient. It is perhaps needless to say that strict antisepsis was carried out in the giving of the injection, and in the many hundreds of injections given only two abscesses occurred; and these from their nature seemed to be local necroses uninfected, as the bacteriological examination in both cases was negative.

Since it has been shown by Löwit and others that injections of weak solutions of many substances, including the alkalies, produce leucocytosis, and since the nuclein solution contained KOH in the strength of a 0.26-per-cent. solution and NaCl in the strength of a 0.6-per-cent. solution, it was also planned to control the experiments of the nuclein solution by giving injections of pure solutions of KOH and NaCl of the same strength as the percentage of these substances contained in the nuclein preparation.

Case I.—L. S., a farmer boy of nineteen years, entered the hospital complaining of symptoms referred to sexual organs. The patient was well developed and well nourished, and the physical examination was entirely negative. Hæmoglobin, 100; red corpuscles, 5,280,-000; leucocytes, 8,000.

The patient was placed upon house diet, and all drugs withheld. The leucocytes were counted for several days, the counts being made four times daily at the same hours and in the same time relation to the taking of meals. For the three days previous to the beginning of the injections the counts were practically the same, as follows:

October 24, 1894.—8.30 A. M., leucocytes, 8,750. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 12,124. 4 P. M., leucocytes, 7,500.

The first injection was given on October 25, 1894. At 8.30 A. M., one hour after breakfast, his leucocytes numbered 11,875. At 11 A. M. they were again counted, and found to be 7,916. Immediately after this count eight cubic centimetres of a one-per-cent. solution of the nuclein mentioned above were injected into the right gluteal region under strict antisepsis. At twelve o'clock the patient complained of faintness and ate no dinner. At 1 P. M. the leucocyte count was 14,636. During the afternoon he complained much of weakness, nausea, and pain in bones. Around the point of injection there was a dull red flush covering an area of about the size of a hand. This area was elevated, hard, and very sensitive.

At 3.30 P. M., the leucocytes were 29,686. The patient's temperature had risen very gradually after the injection, at four o'clock reaching 100.8°. After this time it fell, and patient felt much better. At 4.30 his leucocytes were 24,688.

On the next morning the patient still complained of nausea and general ill-feeling. At 9.30 A. M., two hours after breakfast, the leucocyte count was 18,175. Temperature at this time was 99.6° F. The point of injection was still red and tender. At 10 A. M. twelve cubic centimetres of the nuclein were injected into the left gluteal. The leucocytes were counted again at eleven o'clock, and found to be 19,219. His temperature had risen to 100.2° F., but patient said that he was feeling much better. A hearty dinner was eaten. At 1 o'clock his temperature had risen to 100.4° F., and the patient complained of much pain at the seat of injection. There was but little redness or swelling at this point. The leucocyte count was 23,750.

At 2 P. M. the patient had a severe chill; his temperature rose to 101° F., and he had frequent attacks of nausea and vomiting. The leucocyte count was 22,600.

At 3 P. M. the leucocytes were 26,256. The patient was still very ill with nausea, headache, chilliness, and pain in bones. His temperature was 103° F. This rose to 104.2° F. at 4 P. M., when patient felt much better. The leucocytes at this time were 30,937.

On the next morning (October 27, 1894) at 8.30 the leucocytes were 30,833. He had eaten no supper the evening before, and had taken but little breakfast. He felt much better, but was still nauseated, and complained of soreness in muscles. Twelve cubic centimetres of the nuclein were injected into the right gluteal immediately after this count. 11 A. M., temperature 99.8°. The patient complained of nothing except slight pain at the point of injection. This was red, hard, and sensitive. Leucocytes, 20,891. 2 P. M., the patient complained of chilliness, nausea, and soreness in muscles. He vomited his dinner and had a slight attack of nosebleed. Temperature, 102.2°; leucocytes, 33,125. 4 P. M., temperature, 104°. Had slight chill, and vomited several times. Leucocytes, 30,813.

October 28th.—9 A. M., temperature, 100.2° F. The patient felt well with the exception of slight attacks of nausea. He could not retain his breakfast. Leucocytes, 20,000. 9.30 A. M., fourteen cubic centimetres of the nuclein solution were injected into the left gluteal. 11.30 A. M., temperature, 100.4°. Frequent attacks of nausea and vomiting. Leucocytes, 27,187. 7 P. M., temperature, 103.4°. The patient complained of feeling very faint. Leucocytes, 39,218.

October 29th.—10 A. M., the patient felt well and ate a hearty breakfast. Leucocytes, 22,975. No nuclein was injected on this day. 2 P. M., temperature, 100° F. Felt well. Leucocytes, 21,795. 7.30 P. M., temperature, 99.8°. Had slight headache. Leucocytes, 22,200. The region of the injections was still red and sensitive.

October 30th.—8.30 A. M., temperature, 98.6° F. Felt quite well. Leucocytes, 10,833. 11 A. M., temperature, 98.6°; leucocytes, 11,250. No injection. 3 P. M., temperature, 98.6°; leucocytes, 13,332. 7.30 P. M., temperature, 98.6°; leucocytes, 12,250.

October 31st.—8.30 A. M., temperature, 98.8° F.; leucocytes, 15,625. 11 A. M., temperature, 98.6°; leucocytes, 16,250. No injection. 2 P. M., temperature, 98.8°; leucocytes, 15,206. 5 P. M., temperature, 98.8°; leucocytes, 12,703.

November 1st.—11 A. M., temperature, 98.8° F. No injection. Leucocytes, 11,875. 4.30 P. M., temperature, 98.8° F.; leucocytes, 11,250.

November 2d.—9 A. M., temperature, 98.8° F.; leucocytes, 9,062. No injection. 4.30 P. M., temperature, 98.8°; leucocytes, 8,500. The patient was discharged on this day. All symptoms arising from the injections had ceased, and patient claimed to feel better than before the injections were begun. There was still slight induration at the point of injections, but the redness had disappeared, and there was no pain.

CASE II.—Mr. T., merchant, aged forty-five years. The patient was of heavy build, but had small amount of fat and was of sallow color. He was under treatment for nervous dyspepsia; his physical examination was negative. Hæmoglobin, 90; red corpuscles, 4,800,000; leucocytes, 6,250. The white cells were counted for a day and a half before beginning the injections.

October 30, 1894.—3.30 P. M., leucocytes, 6,250. 7 P. M., leucocytes, 10,000.

October 31st.—9 A. M., leucocytes, 7,875. 11.30 A. M., leucocytes, 5,832. 2.30 P. M., leucocytes, 8,332. 5.30 P. M., leucocytes, 7,187.

November 1st.—8.30 A. M., temperature, 98° F.; leucocytes, 7,708. 2 P. M., temperature, 98°; leucocytes, 6,505. Immediately after this count one cubic centimetre of nuclein was injected into the right gluteal. 2.05 P. M., temperature, 98°; leucocytes, 8,125. 2.15 P. M., temperature, 98°; leucocytes, 9,375. 2.30 P. M., temperature, 98°; leucocytes, 10,000. 3 P. M., temperature, 98.6°; leucocytes, 13,000. 4 P. M., temperature, 98.8°; leucocytes, 10,000. No symptoms. 5 P. M., temperature, 99°; leucocytes, 6,456.

November 2d.—8.45 A. M., temperature, 99° F.; leucocytes, 8,537. 11 A. M., temperature, 99.2°; leucocytes, 8,956. Two cubic centimetres of the nuclein were injected into the left gluteal immediately after this count. The patient complained of much pain at the seat of first injection. This was indurated, very sensitive, and slightly reddened. 11.05 A. M., temperature, 99.2°; leucocytes, 10,616. 1.45 P. M., temperature, 99.2°; leucocytes, 8,353. 3 P. M., temperature, 99.6°; leucocytes, 8,437. 5 P. M., temperature, 100.2°; leucocytes, 9,375. 7.45 P. M., temperature, 100.4°; leucocytes, 10,939. The symptoms resulting from the injection were slight, with the exception of the local pain. Occasional chilly sensations were the only things remarked by the patient.

November 3d.—8.45 A. M., temperature, 99° F.; leucocytes, 16,250. 11.15 A. M., temperature, 98°; leucocytes, 16,456. The patient did not feel so well this morning, but complained of pain in the muscles. Three cubic centimetres of nuclein were injected into the right gluteal after this count. 11.20 A. M., temperature, 98°; leucocytes, 14,321. 11.35 A. M., temperature, 98°; leucocytes, 12,625. 1.45 P. M., temperature, 98°; leucocytes, 10,308. 3 P. M., temperature, 98°; leucocytes, 8,750.

November 4th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 11,406. 9 A. M., temperature, 98.6°; leucocytes, 11,406. Four cubic centimetres of nuclein were injected into the left gluteal after this count. There was no local reaction at point of previous injections, and patient said that he felt well. 9.05 A. M., temperature, 98.6°; leucocytes, 8,437. 10.30 A. M., temperature, 98.6°; leucocytes, 7,594. 2 P. M., temperature, 99.8°; leucocytes, 15,625. 4 P. M., temperature, 99.8°; leucocytes, 10,313. Slight nausea was complained of during the afternoon. No reaction at point of injection.

November 5th.—The patient felt well this morning and went for a walk, so the count was not taken up until afternoon. 1.30 P. M., temperature, 98.6° F.; leucocytes, 11,256. Six cubic centimetres of nuclein were injected into the right gluteal after this count. There was slight induration at the seat of the previous injections, otherwise no reaction. 1.35 P. M., temperature, 98.6°; leucocytes, 12,625. 2 P. M., temperature, 98.6°; leucocytes, 8,333. 3.30 P. M., temperature, 98.6°; leucocytes, 9,894. 4 P. M., temperature, 98.6°; leucocytes, 8,019. 4.30 P. M., temperature, 99.8°; leucocytes, 11,894. 6 P. M., temperature, 99.8°; leucocytes, 11,719. 7.30 P. M., temperature, 101°; leucocytes, 11,563. He had slight chill during the evening, with headache and nausea.

November 6th.—The patient did not rest well during the night, but complained of fever and pain in bones. 9 A. M., temperature, 102° F.; leucocytes, 13,750. 10 A. M., temperature, 102°; leucocytes, 12,786. Immediately after this count twelve cubic centimetres of nuclein were injected into the left gluteal. The seat of yesterday's injection was red and swollen. 11 A. M., temperature, 102°; leucocytes, 15,626. 1.30 P. M., temperature, 102°; leucocytes, 16,637. 2.30 P. M., temperature, 102°; leucocytes, 15,208. Headache, nausea, pain in bones, dizziness, and chill. 4 P. M., temperature, 101.8°; leucocytes, 10,625. 5 P. M., temperature, 101.4°; leucocytes, 10,871. The patient was ill all day, but became better as the temperature fell.

November 7th.—9 A. M., temperature, 101.1° F.; leucocytes, 15,719. 11 A. M., temperature, 100°; leucocytes, 17,929. The patient declined to receive any more injections or to permit the continuation of the blood counts. Since the last injection of twelve cubic centimetres he had had intense headache, nausea, and muscular pain. The gluteal region was indurated, very red, and painful. He remained under observation for several days: the general symptoms disappeared with the subsidence of the local reaction.

CASE III.—Miss T., eighteen years of age, was referred from surgical clinic for nuclein treatment. She had been in the hospital for some time for tuberculosis of the right femur. The patient was pale, thin, but had no fever. She had a constant leucocytosis of 15,000 to 27,000. The hæmoglobin was 70; the red blood-corpuscles were 3,000,000. The leucocytes were counted four times daily for three days before beginning the injections.

November 8, 1894.—8 A. M., temperature, 98.6° F.; leucocytes, 18,000. 10.30 A. M., temperature, 98.6°; leucocytes, 18,125. 2.30 P. M., temperature, 98.6°; leucocytes, 16,038. 5 P. M., temperature, 98.6°; leucocytes, 19,375.

November 9th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 17,912. 12 noon, temperature, 98.6°; leucocytes, 27,500. 2 P. M., temperature, 98.6°; leucocytes, 25,000. 5 P. M., temperature, 98.6°; leucocytes, 20,966.

November 10th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 15,104. 11.45 A. M., temperature, 98.6°; leucocytes, 18,509. 2.05 P. M., temperature, 98.8°; leucocytes, 17,963. 5 P. M., temperature, 98.8°; leucocytes, 14,375.

November 12th.—10 A. M., temperature, 99.2° F.; leucocytes, 16,250. After this count eight cubic centimetres of the nuclein were injected into the right gluteal. 10.10 A. M., temperature, 99.2°; leucocytes, 13,956. 10.30 A. M., temperature, 99.2°; leucocytes, 12,187. 11 A. M., temperature, 99.2°; leucocytes, 14,162. 12 noon, temperature, 99.6°; leucocytes, 14,000. 1 P. M., temperature, 99.6°; leucocytes, 14,162. 2 P. M., temperature, 99.6°; leucocytes, 14,064. 3.30 P. M., temperature, 100°; leucocytes, 16,061. No symptoms. 4.30 P. M., temperature, 100.4°; leucocytes, 20,519. 5.30 P. M., temperature, 100.8°; leucocytes, 21,350.

November 13th.—9 A. M., temperature, 99.4° F.; leucocytes, 17,500. An injection of twelve cubic centimetres of the nuclein was given after this count. 9.15 A. M., temperature, 99°; leucocytes, 13,853. 10 A. M, temperature, 99.6°; leucocytes, 14,109. 1 P. M., temperature, 100.8°; leucocytes, 20,103. 3 P. M., temperature, 100.8°; leucocytes, 26,143. 5 P. M., temperature, 104°; leucocytes, 19,375. Chill, nausea, headache, pain in bones.

November 14th.—8.30 A. M., temperature, 100° F.; leucocytes, 20,625. Sixteen cubic centimetres of nuclein injected after this count. 8.50 A. M., temperature, 100°; leucocytes, 16,968. 9 A. M., temperature, 100°; leucocytes, 16,666. 10 A. M., temperature, 100°; leucocytes, 12,603. 11 A. M., temperature, 100°; leucocytes, 17,603. 12 noon, temperature, 100.2°; leucocytes, 17,000. 2 P. M., temperature, 100.2°; leucocytes, 20,312. 3 P. M., temperature, 100.6°; leucocytes, 12,907. 4.30 P. M., temperature, 100.4°; leucocytes, 13,212. 6 P. M., temperature, 100.2°; leucocytes, 16,250.

November 15th.—10.30 A. M., temperature, 98.6° F., leucocytes, 15,315. Fourteen cubic centimetres of nuclein were injected after this count. 10.45 A. M., temperature, 98.6°; leucocytes, 13,540. 12 noon, temperature, 98.6°; leucocytes, 12,706. 1.30 P. M., temperature, 99°; leucocytes, 13,763. No reaction. 3 P. M., temperature, 99.5°; leucocytes, 11,250. 5 P. M., temperature, 99.5°; leucocytes, 9,219.

November 16th.—Twelve cubic centimetres of nuclein injected at 9.30 A. M. The lowest count during the day was 12,000; the highest, 16,000. The patient had no reaction.

November 17th.—The reaction set in during the night with fever, sweating, and pain in bones. At 9 A. M. her temperature was 105°; the leucocytes at this time were 29,031. The point of injection was very red, hot, and painful. During the morning the patient had a severe chill. The fever continued all day; at 4 P. M. it was 104°. The leucocytes at this time were 31,250.

November 18th.—She had entirely recovered from the marked symptoms of yesterday, but the gluteal region was still very sensitive. Four cubic centimetres of nuclein were injected. No reaction during the day. The lowest count was 10,000; the highest, 14,687. For seven days four cubic centimetres of nuclein were injected daily. There was no reaction, local or general, and the leucocyte count during this time varied from 8,000 to 14,687. The injection of four cubic centimetres was continued daily until December 5th. There was no reaction and no change in the proportion of leucocytes. On this day the counts stood as follows: 8.45 A. M., temperature, 98.6° F.; leucocytes, 14,687. Four cubic centimetres of nuclein injected after this count. 9 A. M., temperature, 98.6°; leucocytes, 13,756.

10.45 A. M., temperature, 98.6°; leucocytes, 10,307. 2 P. M., temperature, 98.6°; leucocytes, 10,000. 4.30 P. M., temperature, 98.6°; leucocytes, 7,500. It was decided to operate upon the patient, so the treatment was discontinued.

December 7th.—The operation had been postponed, so the experiments were again taken up. With the consent of the patient it was decided to inject solutions of NaCl, NaOH, and KOH of the strength contained in the nuclein solution. 8.30 A. M., temperature, 98.6° F.; leucocytes, 9,688. Twelve cubic centimetres of a six-per-cent. solution of NaCl were injected into the right gluteal. 9.30 A. M., temperature, 98.6°; leucocytes, 10,206. 11 A. M., temperature, 98.6°; leucocytes, 12,300. 1.30 P. M., temperature, 98.6°; leucocytes, 12,300. 3.30 P. M., temperature, 98.8°; leucocytes, 15,000. 5 P. M., temperature, 98.8°; leucocytes, 11,875. The patient had no symptoms whatever.

December 8th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 12,705. Twelve cubic centimetres of NaOH were injected after this count into the left gluteal. 10 A. M., temperature, 98.6°; leucocytes, 12,708. 11.30 A. M., temperature, 98.6°; leucocytes, 11,037. 3.30 P. M., temperature, 98.8°; leucocytes, 14,163. No symptoms.

December 9th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 12,000. Twelve cubic centimetres of a 0.26-per-cent. solution of NaOH were injected into the right gluteal immediately after this count. 10 A. M., temperature, 98.6°; leucocytes, 12,708. 11.30 A. M., temperature, 98.6°; leucocytes, 14,000. 3.30 P. M., temperature, 98.8°; leucocytes, 14,000. The patient had no symptoms.

December 10th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 12,708. Twelve cubic centimetres of the 0.26-per-cent. solution of NaOH were injected after this count into the left gluteal. 10 A. M., temperature, 98.6°; leucocytes, 12,708. 11.30 A. M., temperature, 98.6; leucocytes, 11,078. 3.30 P. M., temperature, 98.8°; leucocytes, 13,000. The patient had no symptoms.

December 11th.—11 A. M., temperature, 98.6° F.; leucocytes. 10,675. Fourteen cubic centimetres of a 0.26-per-cent. solution of KOH injected into right gluteal after this count. 1 P. M., temperature, 98.6°; leucocytes, 11,875. 2.30 P. M., temperature, 98.6°; leucocytes, 13,282. 3.30 P. M., temperature, 98.8°; leucocytes, 14,375. 5.15 P. M., temperature, 98.8°; leucocytes, 10,000. There was no local reaction and patient had no symptoms.

December 12th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 10,625. Sixteen cubic centimetres of the 0.26-per-cent. solution of KOH injected into the left gluteal. 1 P. M., temperature, 98.6°; leucocytes, 15,000. 3.30 P. M., temperature, 98.6°; leucocytes, 10,000. No local reaction; no symptoms save a slight diarrhœa.

December 13th.—10.30 A. M., temperature, 98.6° F.; leucocytes, 16,563. Sixteen cubic centimetres of the 0.26-per-cent. solution of KOH injected into the right gluteal. 11 A. M., temperature, 98.6°; leucocytes, 10,313. 2.30 P. M., temperature, 98.6°; leucocytes, 13,750. 4.30 P. M., temperature, 98.6°; leucocytes, 17,750. No local reaction; no symptoms; diarrhœa had ceased.

December 14th.—10 A. M., temperature, 98.6° F.; leucocytes, 11,094. Fourteen cubic centimetres of the 0.26-per-cent. solution of KOH injected after this count. 11.30 A. M., temperature, 98.6°; leucocytes, 10,937. A second injection of fourteen cubic centimetres of the 0.26-per-cent. solution of KOH injected into the right gluteal. 2 P. M., temperature, 98.8°; leucocytes, 11,250. 3.30 P. M., temperature, 100.6°; leucocytes, 11,875. 5 P. M., temperature, 100.6°; leucocytes, 15,625. The patient had slight nausea, headache, and muscular pain. There was a red flush about the points of injections. An area of the size of a hand was indurated and very sensitive.

December 15th.—9 A. M., temperature, 98.6° F.; leucocytes, 11,250. The reaction of yesterday lasted but a few hours. It was decided to return to the nuclein injections. Fourteen cubic centimetres of the nuclein solution injected into the left gluteal. 3 P. M., temperature, 98.6°; leucocytes, 15,000. 5 P. M., temperature, 98.6°; leucocytes, 12,500. There was no reaction, local or general.

December 16th.—9 A. M., temperature, 98.6° F.; leucocytes, 15,000. At 9.30 fourteen cubic centimetres of the nuclein solution were injected into the right gluteal. 11.30 A. M., temperature, 98.6°; leucocytes, 15,000. 3.30 P. M., temperature, 98.6°; leucocytes, 14,500. There was a slight general reaction, nausea, etc.

December 17th.—9 A. M., temperature, 98.6° F.; leucocytes, 10,000. Twelve cubic centimetres of the nuclein solution injected into the left gluteal after this count. 11 A. M., temperature, 98.6°; leucocytes, 9,500. 5 P. M., temperature, 98.6°; leucocytes, 10,000. There was no reaction.

December 18th.—9.45 A. M., temperature, 98.6° F.; leucocytes, 11,875. Twelve cubic centimetres of the nuclein solution injected into the right gluteal. 10 A. M., temperature, 98.6°; leucocytes, 10,000. 11 A. M., temperature, 98.6°; leucocytes, 10,150. 1.30 P. M., temperature, 98.6°; leucocytes, 13,250. 3.30 P. M., temperature, 98.8°; leucocytes, 15,000. 5.50 P. M., temperature, 98.8°; leucocytes, 16,250. There was no reaction, local or general.

December 19th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 14,300. Twelve cubic centimetres of the nuclein solution injected into the left gluteal. 11.30 A. M., temperature, 98.6°; leucocytes, 10,000. 2 P. M., temperature, 98.6°; leucocytes, 16,275. 5 P. M., temperature, 98.6°; leucocytes, 15,000. There was no reaction, local or general.

December 20th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 14,375. Fourteen cubic centimetres of the nuclein solution injected into the right gluteal. 11 A. M., temperature, 98.6°; leucocytes, 10,000. 2 P. M., temperature, 98.6°; leucocytes, 14,375. 5 P. M., temperature, 98.6°; leucocytes, 15,000. There was no reaction, local or general.

December 21st.—8.30 A. M., temperature, 98.6° F.; leucocytes, 13,000. Fourteen cubic centimetres of the nuclein solution injected into the right gluteal. 11 A. M., temperature, 98.6°; leucocytes, 10,000. 2 P. M., temperature, 98.6°; leucocytes, 15,000. 5 P. M., temperature, 98.6°; leucocytes, 16,375. There was no reaction, local or general.

December 22d.—8.45 A. M., temperature, 99.8° F.; leucocytes, 14,375. 9.30 A. M., temperature, 99.8°; leucocytes, 16,250. Eight cubic centimetres of the nuclein solution injected into the left gluteal. The right gluteal region is very red, hard, and painful. 9.45 A. M., temperature, 99.8°; leucocytes, 16,250. 11.30 A. M., temperature, 100.2°; leucocytes, 18,125. 2 P. M., temperature, 102°; leucocytes, 11,875. 4 P. M., temperature, 100.2°; leucocytes, 18,750. 5 P. M., temperature, 100°; leucocytes, 15,000. The patient felt very ill all day; severe headache, nausea, and pain in muscles.

December 23d.—The patient was ill all night. Gluteals so red and swollen that it was thought best to stop the injections. Temperature rose from 100° to 104° F.; leucocytes, 18,000 to 20,000.

Since yesterday symptoms continued with increase of the local condition. Fluctuation was obtained at the seat of the two injections of KOH made on the 14th into the right gluteal. An incision was made and eight drachms of what seemed to be entirely liquid fat mixed with a small quantity of blood were removed. Under the microscope this was found to consist chiefly of fat droplets, a moderate number of pus cells, and blood-corpuscles. A bacteriological examination was negative (?). The temperature varied from 101° to 102°; the leucocytes remained at 18,750.

The patient was observed for some time longer; the abscess soon healed; temperature became normal, and the daily average of leucocytes was 12,000. In spite of the discomfort arising from the abscess the patient made constant improvement during the period of injections. The nuclein was withheld eight days, and then the internal administration was begun. Five cubic centimetres were given three times daily for six weeks. During this time no reaction was ever obtained, hence systematic counts of the leucocytes were not made.

(*To be continued.*)

A STUDY OF THE NARES AND PHARYNX IN A CASE OF HÆMOPHILIA.*

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As a usual rule, the diagnosis of hæmophilia can readily be made from the history of the case and the peculiar difficulty experienced in the control of the hæmorrhage. The case reported in this paper presented several features forming a symptom group almost impossible to place accurately under the heading of any definite title. As the hæmorrhagic diathesis was the most prominent feature of the case, and at the same time the object for which the patient sought relief, it has seemed desirable to place the symptom complex under that category. Of special interest to the laryngologist are the phenomena presented in this disease in the upper respiratory tract. The chief source of hæmorrhage in the large majority of the cases is from the nose. Grandidier (as quoted by Osler) studied three hundred and thirty-four cases and found epistaxis in a hundred and sixty-nine, or over fifty per cent., while in forty-three the hæmorrhage was from the buccal cavity and pharynx.

The history of the case for consideration is as follows:

J. D., a woman, aged thirty-two years, was first seen in December, 1896.

Family History.—Nothing known of paternal side of family; maternal aunt suffered from thyreoid enlargement when young, but it disappeared after lasting a few years.

Two other maternal aunts were subject to "paralytic" strokes, one having died from this cause; the other one, although partially paralyzed, is still living. A younger brother suffered from nosebleed from very early life until his thirteenth year, when he was killed in a railroad accident. The nasal hæmorrhage in the brother was frequent and copious, for several weeks at a time bleeding every night and taxing all their resources to control it. He never presented any other symptoms of hæmophilia—such as the purpuric spots—but was liable to bleed excessively from the slightest cut or scratch. Other than this, the family history is negative, presenting nothing of importance bearing on the case.

Personal History.—Married eleven years; has one child, a boy, eight years of age, who is well and in good physical condition—not in any way, as yet, giving evidence of the hæmorrhagic diathesis. She has always enjoyed good health until five years ago, when she had "rheumatic heart trouble," from which she made a perfect recovery. Four years ago she noticed that the thyreoid gland was increasing in size, although not productive of any discomfort, and for which she never received medical advice. A few months later the thyreoid enlargement appeared to have reached its maximum and she was troubled with her eyes, complaining of a peculiar sensation, as if pressure was being made at the base of the orbit. At this time her eyes became very prominent (constituting the symptom complex of exophthalmic goître), and have continued in that condition until the present time. All the usual symptoms of exophthalmic goître were present except pressure of the adjacent tissues from the enlarged gland.

In July, 1896, she noticed a few dark spots on her thighs, varying in size from that of a pea to that of a twenty-five-cent piece. After a week they gradually began to disappear; no fresh spots were formed, and in two weeks they had nearly faded away, being then yellowish green in color. She described them as like the change of color seen in a severe bruise. They were not accompanied with pain or any physical depression. As they faded away she became very nervous and complained of severe frontal headache and a fullness of the head; this lasted for several hours, and was followed by an attack of epistaxis, the blood coming from both nasal orifices in a steady stream for several hours. As the nasal bleeding gradually ceased she had an attack of "pseudo-angina pectoris" (without the fear of impending dissolution seen in true angina), accompanied with dyspnœa, headache, weakness, malaise, and for a few days following there were some gastro-intestinal disturbances, as shown by the coated tongue, nausea, anorexia, and irregular bowels. These attacks have always been much alike—first, the appearance of the subcutaneous hæmorrhages, then nervousness, followed by epistaxis, and, finally, cardiac symptoms, terminating with an attack of indigestion.

On further investigation it was found that the purpura and epistaxis frequently alternated, one taking the place of the other; except for this, the attacks were similar. She denies syphilitic infection, and says she never had an eruption on the skin until the blood spots appeared last July. Since that time the epistaxis or purpura has occurred twice a week or once in every two weeks, seeming to have a definite time for their appearance. Frequently the epistaxis or purpura, and especially the former, would replace the menstrual flow, and when her courses were present, which was very infrequent, they would cause intense pain. When epistaxis replaced the menstrual flow there was nothing, such as a discharge, to indicate its presence, except the nasal bleeding and the time of the month at which it would occur. All these attacks came on without apparent exciting cause, exertion or physical depression seemingly bearing no relation to the affection. A number of times the epistaxis would occur during the night, and she would only be aware of its presence by the blood running from the nose into the larynx and choking her. Or, if the epistaxis was not present, she would retire at night with a perfectly clear skin and awake in the morning with a number of purpuric spots scattered irregularly over the surface of the body. The nasal bleeding usually lasted for a considerable period of time, the minimum being an hour and a half, while the maximum was ten hours. This prolonged hæmorrhage occurred but once and was continuous, nearly exsanguinating her, followed by an exaggeration of the group of symptoms previously described.

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* Read before the New York County Medical Association, November 15, 1897.

The purpuric spots varied in size and numbered as many as fifty at one time, scattered all over the surface of the body, but were most generally marked on the inner surface of the thighs and legs. In shape they were generally round or oval, but sometimes vibices and ecchymoses were seen. The spots were not elevated above the surface of the skin, and did not disappear on pressure. They were at first pale pink in color, gradually increasing to a bright red, remaining red for from twenty-four to forty-eight hours, and finally passing through transitional stages until nearly black, gradually becoming yellow, and finally fading away.

On examination, when first seen, the woman was pale, almost chlorotic in color; exophthalmia was marked; the thyreoid was as large as the fist, and scattered over the body (but not on the face and hands) were about half a dozen small purpuric spots. She complained of a tingling sensation of the lower limbs and general weakness, just having gone through a severe nasal bleeding. The cardiac valves were normal, but the terminal circulation was poor. Examination of the nasal cavities showed the turbinated bodies to be sclerosed and the mucous membrane "water-logged," being macerated from blood and excessive serous discharge. The sclerosis was most marked in the entire lower and anterior third of the middle turbinate, the posterior extremity of the middle being somewhat hypertrophied, evidently undergoing the transitional stage from hypertrophy to sclerosis. The vestibule on both sides was covered with nitrate of silver, as was the anterior portion of the cartilaginous sæptum, the drug having been applied to control the hæmorrhage on the day previous to that on which I first saw her.

After cleansing the nose as thoroughly as possible, a minute ulceration was seen on the left side of the sæptum near the nasal floor and over the situation of the anterior sæptal artery; on the right side no ulceration was visible. The mucous membrane of the sæptum was congested and macerated, and the sæptum itself was thickened to about one third its original size, with a small shelflike projection over the junction of the vomer and the vertical plate of the ethmoid. The nasopharynx, pharynx, and tonsils were covered with coagulated blood and nitrate of silver; when this was removed, it was seen that the tissues named were the seat of a general sclerosis involving the entire upper respiratory tract above the superior opening of the larynx.

At this time there were no petechial spots on the mucous membrane of either the nose or throat. She stated that she had had "catarrh" for a number of years, and was greatly annoyed from the excessive muco-purulent secretions, but previous to July, 1896, had never suffered from nosebleed. As a usual rule the blood flowed from the nose as if it were oozing; it did not pour out in a sharp stream, but came away in steady drops. Occasionally the nasal vestibule was the seat of pruritus, and then she would use her finger to relieve the itching. This was always followed by a sharp attack of epistaxis, especially of the left side, the blood coming in a steady stream as if a vessel had been ruptured. This was the case, as the ulcer on the left side was situated directly over the sæptal artery. The regular attacks of epistaxis, non-traumatic, but coming on without apparent cause, presented several interesting phenomena, which I was able to watch on several occasions after the ulceration had healed. The blood in these attacks came from both nasal cavities, and when mopped away was seen to transude from the mucous membrane of the middle and inferior turbinated bodies as far back as could be seen and from the sæptum, particularly from the areas most covered with cavernous tissue.

There was no breach in the continuity of the parts, the blood making its appearance simply as would a free perspiration from the skin. For this reason the difficulty of controlling the hæmorrhage could well be appreciated.

Blood examination showed the hæmoglobin to be fifty-eight per cent.; red blood-corpuscles, 5,380,000 to the cubic millimetre; leucocytes, 5,350 to the cubic millimetre; the condition of poikilocytosis was well marked, a great many of the blood-cells being partly broken up and altered in peculiar shapes. The blood examined was removed from the finger in the usual manner with a delicate sterilized needle, but one puncture being made, from which free bleeding ensued for several hours.

The treatment consisted of the use of an abundance of plain substantial food, with as small a quantity of water as possible. Quiet was enjoined, and rest in bed ordered; but from her social position this was impossible, as she had to attend to her household duties. Various drugs were tried, without benefit, until she received inunctions of biniodide of mercury and tincture of belladonna, the latter being gradually increased in amount until she was taking twenty-five minims a day. The epistaxis was controlled with a cotton plug saturated with either tannic acid in glycerin or a saturated solution of antipyrine. The following notes of the case were taken at intervals, and will show the course of the disease.

December 31, 1896.—Condition very bad, as she feels weak, and has had three attacks of epistaxis during the past few days.

January 2, 1897.—Has had one attack of epistaxis since last date, lasting from 6 to 10 A. M., and waking her from her sleep.

8th.—Epistaxis from 9 A. M. to 3 P. M.; came on without apparent cause, and was only controlled by anterior and posterior tampons.

16th.—Until last week the eruption had been gradually disappearing on the body as she has had the attacks of epistaxis, the last attack being three days ago. She now feels very miserable, and has six well-marked petechial patches on the limbs. Examination of the fauces disclosed the first appearance of the petechial rash on the mucous membrane of the palate and posterior pharyngeal wall—this, so far as ascertainable, being the first time the blood has extravasated into the mucous membranes. The pharyngeal vibices were two in number, situated almost in the median line, dark red in color, and long and narrow. On the right side of the fauces and directly over the anterior pillar was the most conspicuous spot, being a quarter of an inch long and about a millimetre and a half in width. These vibices followed the usual course, as observed when they appeared on the cutaneous surface, and while they existed nasal hæmorrhage was in abeyance.

February 9th.—Have not seen the case since the last date, as she was feeling much better; her general condition is excellent; no hæmorrhages into the skin or mucous membranes, but has had two severe attacks of epistaxis. The thyreoid gland is diminishing in size, but the exophthalmia remains the same.

18th.—Has had nasal bleeding since the 16th, the blood dripping from both nasal apertures. She has done nothing to arrest the flow of it, and it has continued for two days; it would apparently cease for a short time, then continue for several hours. Tannic-acid tampons were applied to control it.

23d.—Has had no epistaxis and but few small purpuric spots since last report, and is much better in all respects.

25th.—No epistaxis until this morning at eight o'clock; it occurred while she was sweeping, lasting until 1 P. M., when the bleeding was controlled with tannic acid.

March 2d.—Bleeding now only occurs when she blows her nose with much violence, and then lasts but a short time, gradually lessening in amount, but still very difficult to control.

18th.—But one slight attack since last date; no purpura; thyreoid gland reduced at least one half; general condition excellent.

25th.—Says she is nearly well, and has had no spots or nasal hæmorrhage since last date.

April 28th.—Thyreoid nearly normal, and no other trouble. She considers herself cured. Since last date she has been in very good health and can not be induced to continue treatment.

As before mentioned, the diagnosis of the case was extremely difficult, the choice lying between exophthalmic goître, purpura hæmorrhagica, peliosis rheumatica, and hæmophilia. Peliosis rheumatica could readily be eliminated by the character of the cutaneous lesions, the absence of multiple arthritis, and its acute course, as in our patient there was no rise of temperature at any time, and the disease ran more or less of a subacute or chronic course, and, although weakening the patient from excessive nasal bleedings, did not confine her to bed.

The symptom complex of exophthalmic goître, of course, was present, but that had existed before the patient came under our observation, and we are not directly concerned with that aspect of the case in this article. Practically, we are narrowed down in our diagnosis between hæmophilia and purpura hæmorrhagica. That the case was one of the latter disease, superadded upon a woman the victim of hereditary hæmophilia, must be received with a proper amount of respect. In favor of the former disease was the history of the case in regard to hereditary bleeders being in the family, her brother being a marked case, while her own case showed the subcutaneous and submucous collections of hæmic material. I also ascertained that several years previous to the present illness she lost considerable blood from having a tooth extracted, the dentist having great difficulty in controlling the bleeding. Add to this her previous (indefinite, it is true) history of rheumatism, and we have considerable evidence in favor of hæmophilia.

In purpura hæmorrhagica, or the morbus maculosus of Werlhof, the bleeding from the mucous membranes is usually very severe, and the disease is seen in young and delicate persons. In this case the patient was a strong and well-developed woman. In purpura there is weakness and other evidence of systemic involvement for a considerable period before the appearance of the hæmorrhagic spots, while in this case the patient was in good condition previous to the eruption and epistaxis, both making their appearance without marked premonitory symptoms; the epistaxis being preceded by some local phenomena, but the purpura was unannounced. From the constant and profuse hæmorrhages into the skin and mucous membranes in purpura a grave form of anæmia results; this is not usually seen in hæmophilia, as the patient has usually time to recuperate before the next hæmorrhage; in this woman there was well-developed anæmia, but it was from the epistaxis and but transitional, she usually recovering her normal blood count in a few days. A careful consideration of the history of the two affections just mentioned seems to be in favor of hæmophilia, and from the study of the entire course of the case I am much inclined to believe my diagnosis is correct.

(To be concluded.)

TERTIARY ULCERATION SIMULATING SARCOMA OF THE TONSIL.*

By D. BRYSON DELAVAN, M. D.

THE following case is of more than passing interest on account of the difficulty which was experienced in establishing a diagnosis. In this case the history of the patient and the condition found in the throat simulated closely some of the characters of malignant disease (sarcoma). Indeed, it was only possible to make the diagnosis of tertiary syphilis after a painstaking microscopical examination, and then only after repeated examination of different specimens, by a process of exclusion rather than by finding in the sections anything which could reasonably be regarded as definitely indicative of syphilis.

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* Read before the American Laryngological Association at its nineteenth annual congress.

It is to be remembered that in the study of the lesions due to syphilis from a pathological standpoint there is no one characteristic feature by which the disease may be distinguished from lesions which may be due to other causes. In tuberculosis, for instance, there is rarely difficulty in determining the nature of the infectious process, since we may either demonstrate the presence of the tubercle bacillus in the lesions or by inoculation or the tuberculin test make apparent the organism which dominates the morbid process. In the case of syphilis, however, the specific organism has not yet been discovered and the pathological lesions in cases known to be of syphilitic origin present such a diversity of features and are, on the whole, so uncharacteristic that it is unusual for the pathologist to be able to make more than a tentative diagnosis of syphilis rather than a positive one.

There is one effect of the syphilitic virus, in the tissues, aside from the formation of gummata or giant cells, which is often an important feature of the lesion. This feature is the proliferation and desquamation of endothelium; whether it be the lining of blood-vessels or lymphatic reticulum or the endothelium of certain of the serous cavities. Oftentimes such proliferation of endothelium is more marked in syphilitic lesions than is commonly found in the lesions of simple hyperplasia.

In the case about to be recorded such a proliferation of the endothelium of the tonsil was the predominant feature in the sections of all the three samples submitted, at different times, for examination. In this case so extensively had this proliferation progressed that the bulk of the tonsil showed in places little else than an aggregation of large polyedral cells, separated for the most part by a delicate fibrillar reticulum. Such an appearance, it is needless to say, in the light of the accompanying clinical history, could not be regarded as being of ordinary inflammatory or hypoplastic origin. The appearances were rather such as are found in some forms of the sarcomata (large-polyedral-cell sarcoma); and the case was so regarded by several competent pathologists. Dr. Hodenpyl reasoned that, in the event of the case being one of polyedral-cell sarcoma, marked evidence of rapid growth should be expected. This evidence was entirely wanting; indeed, on the third examination of the entire tonsil removed, some two weeks later, the tonsil was even smaller than normal, but yet presented the same peculiar features as were noted at first. Accordingly, both the diagnoses of chronic hyperplasia and that of sarcoma were abandoned and a provisional diagnosis of syphilis of the tonsil was made, which, happily for the patient, who was successfully treated with antisyphilitic remedies, proved to be correct.

The patient whose history forms the basis of this report was sent to me for advice as to the removal of a tumor, apparently malignant, of the left tonsil. He gave the following history: X. Y., aged forty-three years, American, married, and father of a family of healthy children; merchant. Family history good. Previous history excellent. No evidence whatever of syphilis, and knowledge of any symptom suggestive of it denied.

About two months before consultation began to notice soreness of left side of pharynx. The tonsil began to increase in size, although prior to this time there had never been any trouble with it. As the enlargement continued the tonsil became inflamed, and finally began to break down, an erosion appearing near the centre of its surface. This extended until about half of the tonsil had become involved in a deep, destructive ulcer, with foul interior and everted edges. At the time of the consultation the remnant of the tonsil was indurated, but there was not marked extension of general infiltration outside of it. Several cervical lymph nodes immediately below the tonsil, however, were slightly enlarged and indurated. The rest of the throat was normal. There was moderate pain in deglutition and upon palpation.

The clinical appearances of this case were highly suggestive of sarcoma. Although the family physician was a well-known practitioner of unusual ability and experience, neither he nor myself were able to find the slightest evidence of syphilis after repeated careful examinations. The patient was a gentleman of excellent intelligence and social position. He was aware of the gravity of the situation and of the danger of the operation necessary for the removal of a malignant tumor of the pharynx, and while professing the utmost willingness to aid us by every means in his power positively denied the knowledge of having contracted specific disease. In order to arrive at a diagnosis as speedily as possible a fragment of the diseased tissue was removed and sent to Dr. Eugene Hodenpyl, of the College of Physicians and Surgeons, New York, and as a matter of routine practice based upon the uncertainty of cases of apparent malignant disease of the throat, the patient was placed upon a course of iodide of potassium. The first report of the pathologist expressed a doubt as to the nature of the lesion, although several other microscopists who saw the specimen considered the case one of sarcoma. A second small fragment was removed and examined about ten days after the first, and this also gave a like negative result.

At this time Dr. Hodenpyl suggested that a positive diagnosis might be arrived at by the examination of one of the affected glands. Meanwhile the latter had almost entirely disappeared. In order to secure enough tissue to make the examination complete, the entire tonsil was removed by means of a cold-wire snare, and the mass thus separated was sent to the pathologists without any reference being made to the change in the condition of the lymph nodes. Again, the general verdict was sarcoma, excepting on the part of Dr. Hodenpyl, whose report was as follows:

Pathological Department of College of Physicians and Surgeons,
November 26, 1896.

Tonsil, X. Y.—The conditions present in this organ are an exact counterpart of those observed in the specimens first examined. The lesion is one of a chronic hyperplastic nature. If it were a polyedral-cell sarcoma (which is a highly malignant variety) we should confidently expect a rapid growth in the past weeks. This tonsil did not seem to be greatly enlarged. The conditions observed, moreover, do not exactly resemble an ordinary chronic hyperplasia, in that, besides a considerable amount of fibrous tissue, giant cells, etc., there is a very unusual number of endothelial cells in the sections, an appearance sometimes found in cases known to be syphilitic. The resemblance of the sections to sarcoma is very striking, but this diagnosis must be excluded on account of the relatively normal size of the tonsil and of the appearance mentioned above.

EUGENE HODENPYL.

The subsequent history of the case fully confirmed this diagnosis. Under the continued administration of iodide of potassium the patient steadily improved, and in a few weeks had entirely recovered. Up to the present time he has remained perfectly well.

Therapeutical Notes.

Euphthalmine, a New Mydriatic,—Trentler (*Klinische Monatsblätter für Augenheilkunde*, September, 1897; *Therapist*, October 15, 1897) has investigated the action of euphthalmine, the new mydriatic, in the Marburg University Eye Clinic, under the direction of Professor C. Hess. The new preparation is the hydrochloric-acid salt of a mandelic derivative of methylimyldiacetonealkamine. It is closely related to the new anæsthetic eucaine, bearing the same relation to it chemically as homatropine bears to tropacocaine.

Careful comparative experiments with the new mydriatic have enabled Dr. Trentler to come to the following conclusions:

1. The instillation of euphthalmine solutions into the eye causes only very slight and temporary inconvenience.
2. Euphthalmine is a powerful mydriatic. A five- to ten-per-cent. solution produces the maximum expansion of the pupil in about the same time as a one-per-cent. homatropine solution.
3. The mydriatic action is less intense and prompt with adults than with young people.
4. As a mydriatic euphthalmine has the advantages over cocaine that it is more powerful in action and does not damage the corneal epithelium; on the other hand, mydriasis is slower in development.
5. Euphthalmine affects the accommodation less than homatropine does.
6. The disappearance both of mydriasis and of the paresis of the accommodation takes place much more quickly than after the employment of homatropine.
7. No unpleasant effects upon the organism have thus far been observed.

The new preparation has, therefore, several important advantages over other mydriatics of brief activity, so that it invites extended employment in ophthalmological practice.

Amylene Hydrate in the Treatment of Diabetes Insipidus.—H. Brackmann (*Therapeutische Monatshefte*, December, 1896; *Centralblatt für innere Medicin*, November 6, 1897) relates the case of an insane person the daily amount of whose urine was reduced to a quarter of what it had been by the use of from fifteen to twenty-two grains of amylene hydrate. On his continuing the use of the drug, however, the amount of urine rose again to about three quarters of the initial quantity.

The Treatment of Carbuncles with Paquelin's Cautery.—Moty (*Abeille médicale*, April 14th; *Nord médical*, November 1st) reports a case of anthrax affecting the lower lip, with secondary foci on the breast, the forearm, and the shoulder, treated by puncture with Paquelin's cautery at each suppurating orifice and subsequent dressing with carbolic acid. In some of the smaller foci the disease was checked at once by the puncture, and no more pus was formed. As for the deep-seated ones, the author remarks that the patient's sensations are the best guide to their situation, for at first they do not betray themselves by physical signs; yet it is of importance to treat them promptly, whether pus has formed or not. The part may be cocainized before the cautery is applied.

Formaldehyde in the Treatment of Burns.—The *Journal de médecine de Paris* for November 7th attributes to the *Pharmaceutische Post* the statement that formaldehyde gives excellent results in the treatment of burns. Compresses soaked in a ten-per-cent. solution are applied. It is said that in twenty minutes all the pain ceases, and that continued renewals of the application cause all traces of the burn to disappear, so that not the slightest redness of the skin is left. We take it that the author of these statements had in mind burns of only moderate severity.

Ichthyol in the Treatment of Small-pox.—Cassenko (*Vratch*, 1897, No. 13; *British Medical Journal*, June 26, 1897; *Therapeutic Gazette*, November, 1897) recommends ichthyol as a local application in variola. He has employed it in ten cases (six hospital and four private). Eight patients recovered and two died; the latter were hopeless when first seen. Two of those who recovered had been the subjects of advanced chronic disease previous to the attack. The remedy was used as an ointment made as follows:

℞	Ichthyol........................	10 parts;
	Fat........................	60 "
	Lanolin........................	20 "

M.

The lanolin, he says, may be replaced by chloroform, olive oil, glycerin, or the like, according to the individual case. The ointment was rubbed in three times a day as soon as the papules became visible. It also proved very beneficial when applied twice a day to the upper part of the trunk in the prodromal stage. As a result there was little or no tenderness at the seats of eruption, the temperature never rose high, and desquamation was almost completed in three or four days from the maturation of the eruption (half the usual duration). In several severe cases where this treatment has been adopted from the very beginning there was no inflammation of the skin and subcutaneous tissue, and the course of the disease was, on the whole, mild in character. No toxic symptoms resulted from the use of the remedy even in children. Rozdestwensky, to whom the author refers in conclusion, has, at the latter's suggestion, tried this mode of treatment in a series of hospital cases and obtained excellent results, but the accounts are not yet published.

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THE ERYSIPELAS-TOXINE TREATMENT OF SARCOMA.

Evidently the last word was not spoken on the subject of Dr. Coley's method of treating sarcoma when, some months ago, it was publicly discountenanced by the New York Surgical Society. As to any effect that the society's decision may have had in the way of deterring surgeons from further resort to the treatment, it seems to have been felt wholly at home, for every now and then we meet with encouraging reports of trials of the method in foreign countries. The latest of these that has come to our notice was made by Mr. Mansell Moullin at a meeting of the Medical Society of London held on November 8th, a report of which is published in the *British Medical Journal* for November 13th.

Mr. Moullin showed two patients on whom he had employed the treatment for tumors suspected to be sarcomatous. One was a man, twenty-eight years old, who was admitted into a hospital in November, 1895, with a swelling in the groin of four weeks' standing. It occupied the right iliac fossa and dipped deep on the inner surface of the pubic bone. It was firm, not fluctuating, rather tender, and situated beneath the iliac vessels. Near it there were four enlarged glands. The patient appeared ill, and his temperature is described as having been irregular. On December 4th half a minim of Coley's fluid was injected, and the next morning the man's temperature had gone up to 100.8° F. That afternoon an injection of a minim was given, but without result. On the 6th and 7th, in the evening, the temperature was 102°. After that the injections were given every second or third day, and the amount of fluid injected at a time was increased gradually to six minims. Some of them were followed by rigors, and others were not. The treatment was continued until the end of February, when it had ceased to have any effect. Mr. Moullin thinks it proved beneficial, for the man's weight rose from a hundred and thirty-eight to a hundred and forty-five pounds. At first the tumor increased rapidly in size, and the skin over it grew red and tender, but about the middle of January it was noticed that the tumor was smaller and that the enlarged glands were less noticeable. At the end of the month it became larger again, and had all the appearances of being acutely inflamed. By the beginning of March it had shrunk and grown hard and irregular in outline, and there was very little of it to be felt. Since that time, for a period of twenty months, there had been hardly any change in it.

The other patient was a man, forty-eight years old, who was admitted on November 10, 1896, with an abdominal tumor which is described as a large irregular swelling, elastic, hard, not fluctuating, not connected with the skin or muscles, and occupying the left flank. It descended into the iliac fossa below and extended under the false ribs above, while in front it reached nearly to the middle line. There was no glandular enlargement or pain. The tumor increased rapidly in size. On December 14th half a minim of Coley's fluid was injected, and the man's temperature rose to 100°. The injections were given every two or three days, and the amount injected was increased gradually to six minims. On the 9th there was a rigor after an injection of four minims. On January 24th there was another rigor after an injection of seven minims, and the temperature rose to 101.8° that evening and 103.6° the next day. It was above normal for a fortnight, and no further injections were given. The account of the case concludes as follows: "The tumor continued to grow until it pressed upon the colon and threatened obstruction. In January it became acutely inflamed, but this subsided, and the tumor began to shrink until it could scarcely be felt. The patient left the hospital in March stouter and stronger than on admission."

Mr. Moullin conceded that it was impossible to be sure that these tumors were sarcomatous, but he declared that he himself had no doubt of it and said it was difficult to imagine what else they could be. Certainly, he added, they were not gummata, and there was nothing to suggest an inflammatory origin. He conceded also that the use of the remedy was attended with some danger, and stated that another patient of his, who was in a weak condition, had died shortly after the second injection. He said he had employed the treatment in nine cases of sarcoma, and one death had occurred. One patient had declined further treatment after two or three injections, and two patients were still under treatment. In three cases the growths had disappeared, and in the others, although the tumors had not disappeared, they had become greatly modified and had diminished in size for a time. He confessed he was unable to decide whether the fluid acted as a specific or merely by provoking inflammation. He recalled that Dr. Coley had published accounts of twenty cases, well authenticated, in which the tumors had disappeared and the patients had remained free from recurrence.

Mr. Watson Cheyne, who remarked that Dr. Coley's statements could be relied upon implicitly, said that he had employed the method in two cases, in one of which the growth had been recognized to be sarcomatous. He called attention to the fact that in all Dr. Coley's cases the tumors had been of the spindle-celled variety. Dr. Colman alluded to the results of the post-mortem examinations of two persons who, after having been subjected to the treatment, had died of some intercurrent disease. In one there had been found a large area of softening in the interior of the tumor, and in the other cicatrices had been found which probably marked the site of past inflammation. Mr. Moullin said he had never had an opportunity of examining a tumor after the treatment, but in a case that was still under his observation a central soft portion had sloughed out since the injections had been begun, without hæmorrhage from subjacent vessels.

In view of all that has been published in the United States and other countries concerning Dr. Coley's method of treating sarcoma, we are probably not warranted in supposing that, even with any modifications of it that may hereafter be devised, it will be accepted finally as the most trustworthy, for the great strides made in the antitoxine treatment of disease during the last few years justify, we think, the hope and expectation that the bacteriologists will yet provide us with a remedy so efficient that it will cease to be thought of any consequence whether a malignant growth is susceptible of excision or not. Still, as constituting perhaps the best treatment thus far proposed for cases of sarcoma in which the removal of the tumor would be too perilous, the erysipelas-toxine treatment deserves, we are inclined to think, much further trial pending the discovery of such a remedy as we have alluded to. At all events, taking into account the favorable impression it has made on some well-known surgeons in France and England, we trust it will not be dropped summarily in the land of its originator.

THE PROGNOSTIC VALUE OF VARICOCELE IN CASES OF TUMOR OF THE KIDNEY.

At the recent French Congress of Urology M. Legueu, a hospital surgeon, supplemented M. Guyon's statements concerning the diagnostic importance of the varicocele that may accompany tumors of the kidney by pointing out its prognostic value also. A condensation of M. Legueu's remarks appears in the *Journal des praticiens* for November 13th. He said that two years before he had come to the conclusion from clinical observation and from investigations in pathological anatomy that the varicocele in such cases was due, not to compression of the spermatic vein by the tumor itself, but to compression of the vein by degenerated ganglia; and he had recently had an opportunity of confirming this conclusion in the case of a patient who had presented himself with these three principal symptoms: hæmaturia, varicocele, and a tumor in the left lumbar region. M. Legueu made a diagnosis of cancer of the left kidney of large size, and did an exploratory laparotomy for the purpose of obtaining more information as to the size of the tumor and as to its connections. In the course of the operation he recognized that the spleen alone was enlarged, and that the kidney presented no degeneration. The patient died two days later. At the post-mortem examination M. Legueu found a cancerous nodule in the left kidney and enormous masses of ganglia lying along the vertebral column and compressing the spermatic vein.

This case, said M. Legueu, showed well that there was no connection between the size of the tumor and the production of varicocele; the latter was only the external manifestation of the secondary adenopathy. If, he continued, a varicocele appeared, whether early or late, in a case of cancer of the kidney, the inference might be drawn that the disease had already extended to the lymphatic glands. Such a conclusion, of course, would weaken any hopes that one might feel warranted in entertaining in cases of small tumors, limited nodules, previously considered as being curable by nephrectomy. If there was a varicocele, either no operation should be undertaken or the operator should follow up the ganglionic masses and remove them.

MINOR PARAGRAPHS.

IKSHURGANDA, AN EAST INDIAN REMEDY FOR VARIOUS GENITO-URINARY DISEASES.

In the *Monatsberichte über die Gesammtleistungen auf dem Gebiete der Krankheiten des Harn- und Sexual-Apparates*, ii, No. 10, we find an abstract of an article by Gangadin, of London, credited to the *Medical Times* and to *Vratch*, 1897, No. 26. According to the author, who is himself of Indian origin, the medicinal virtues of ikshurganda have been known to the physicians of India from time immemorial, but do not seem to be at all known in other countries. These virtues reside in the whole plant, but chiefly in the fruit. It is regarded as diuretic and as strengthening the sexual power, also as efficacious in strangury, renal lithiasis, and other urinary affections, and in spermatorrhœa. Gangadin states that he has used it with excellent results in spermatorrhœa and in certain forms of impotence in men. In spermatorrhœa, he says, it is particularly indicated in cases in which the trouble is due to unnatural thinness of the seminal fluid, to excesses in venery, to irritation or chronic inflammation of the prostate or the seminal vesicles, or, finally, to masturbation. In impotence, it is especially recommended in cases induced by masturbation and accompanied by spermatorrhœa, but without as yet any affection of the general nervous system; in temporary impotence due to sexual excesses; in impotence due to the fact that the testicles secrete a thin, watery semen [a new point in the ætiology of impotence, we imagine]; and in cases in which the impotence is accompanied by urinary disturbances, such as painful urination, insufficient capacity of the bladder, too long retention of urine, etc. As a matter of course, the remedy is more efficacious in cases of incomplete impotence than in those in which sexual power is entirely lost and erections no longer occur. It is given in the form of an infusion, in doses of from five to twenty drops. The abstract contains nothing about the botany of ikshurganda.

SPASM OF THE PYLORUS.

Doyen (*Médecine moderne*, 1897, No. 43; *Centralblatt für Chirurgie*, October 30, 1897) states that he has made a systematic study of contracture of the pylorus since the year 1892. He has performed nearly a hundred operations on the stomach, and sixty-one of them were not for cancer. In forty-six of these there was stenosis due to spastic contracture without cicatricial changes. Only in twenty-four instances could ulceration in the neighborhood of the pylorus have played a part in the ætiology. The pylorus was carefully examined in every case, and generally it was excised. Its orifice was from seven to ten millimetres in diameter, or even less, and this constriction was always the real impediment to the emptying of the stomach, and never the scars that were sometimes present in other situations. In spasm due to acidity the patients do not generally vomit, he says, but on taking the least bit of food they suffer extraordinary pains, which interfere with sleep and lead to abstinence. When spasm of the pylorus does not yield to internal remedies, an operation must be performed. Recovery is to be expected if the operation is done well and at the right time, and therefore in cases of ulcer of the stomach and stubborn dyspepsia gastro-entero-anastomosis should be resorted to. Of his thirty-six most recent operations, since 1895, thirty-two have ended in recovery. One patient died of gastric hæmorrhage ten days after the operation, and the three others that died were already too cachectic at the time of the operation.

THE TRANSMISSION OF THE AGGLUTINANT PRINCIPLE OF TYPHOID FEVER BY LACTATION.

At a recent meeting of the Paris Society of Biology (*Indépendance médicale*, November 10th) M. Landouzy and M. Griffon alluded to the experimental observation of such a transmission in the mouse and the failure to observe it in the guinea-pig and the cat. They were able to report a case in which it had been observed in the human subject. About three months after her confinement a young woman was attacked with typhoid fever of medium severity. She entered the Laënnec Hospital with her baby, which she had nursed up to that time. The presence of typhoid fever, in the second week of its course, was evident clinically, and the serum diagnosis was positive. The child seemed perfectly healthy, but its blood was found to possess the agglutinating property.

THE ÆTIOLOGY OF CIRRHOSIS.

At a recent meeting of the Paris Academy of Medicine (*Progrès médical*, October 16th) there was a short discussion on this subject between Vallin and Lancereaux. Vallin stated his belief, in opposition to Lancereaux's, that alcohol played a preponderating part in causing cirrhosis. Lancereaux, replying, insisted upon the extreme rarity of cirrhosis in the colonies, in which but little wine was drank, and in Burgundy, where the wine was not plastered. Alcohol, he said, gave rise to fatty degeneration of the liver, and not to cirrhotic lesions.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 30, 1897:

DISEASES.	Week ending Nov. 23.		Week ending Nov. 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	4	28	5
Scarlet fever	153	9	125	7
Cerebro-spinal meningitis	0	0	0	0
Measles	258	17	231	8
Diphtheria	172	19	205	26
Croup	5	7	6	4
Tuberculosis	224	88	153	93

The New York Academy of Medicine.—At a stated meeting of the Section in Ophthalmology and Otology, on Thursday evening, the 2d inst., Dr. Gorham Bacon was to read a paper entitled Suppurative Otitis Media: its Complications and Treatment, which was to be discussed by Dr. M. A. Starr, Dr. R. F. Weir, Dr. A. H. Buck, Dr. B. Sachs, Dr. L. A. Stimson, Dr. H. Knapp, Dr. Robert Abbe, Dr. D. B. St. John Roosa, Dr. E. D. Fisher, Dr. E. B. Dench, Dr. J. A. Booth, and others.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 9th inst., Dr. Henry Koplik will read a paper on Pasteurized Milk as a Food for Infants, which is to be discussed by Dr. A. Caillé, Dr. W. L. Carr, Dr. R. G. Freeman, Dr. L. E. Holt, and Dr. F. M. Crandall. Patients will be presented and specimens exhibited.

At the next meeting of the Section in Genito-urinary Diseases, on Tuesday evening, the 14th inst., the following papers will be read: The Treatment of Urethral Stricture, by Dr. J. Blake White; and Further Studies on the Gonococcus, by Dr. Henry Heiman. New instruments will be exhibited as follows: The Janet sterilizer for small instruments, by Dr. John Van Der Poel; Albaron's meter cystoscope, a urethral and vesical irrigator, Kollman's irrigating dilator, and Wossidles centrifuge, by Dr. F. C. Valentine; and a demonstration will be made of Freudenberg's modification of Bottini's incisor for the galvano-caustic radical treatment of hypertrophy of the prostate, by Dr. Willy Meyer. Cases will be reported and patients presented.

The New Hospital for Scarlet Fever and Diphtheria.—This new hospital will be opened for patients toward the end of December. It is expected that by the middle of the month the details of the plan of organization, the list of members of the visiting staff, the rules for admission, etc., will be ready for publication.

The Late Dr. Charles H. Avery.—At a stated meeting of the Medical Society of the County of New York, held at the New York Academy of Medicine, on Monday, November 22, 1897, the following resolutions were adopted:

Whereas, Dr. Charles H. Avery, our esteemed and honored secretary, has been removed by death, which occurred on November 2d,

Resolved, That we hereby express our deep sense of the loss which our society has sustained in his decease.

Resolved, That we desire to bear testimony to the sterling integrity of his character, to his genial, social qualities, and to his devotion to the interests of this society which he has so long faithfully and efficiently served in the capacity of secretary.

Resolved, That a copy of these resolutions be transmitted to the medical journals of this city and an engrossed copy be sent to the family of our deceased associate.

[Signed.] JOHN S. WARREN, M. D., } *Committee.*
WILLIAM E. BULLARD, M. D., }

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending November 27, 1897:

Yellow Fever—United States.

Mobile, Ala.	Nov. 19–23	4 cases,	2 deaths.
Pensacola, Fla.	Nov. 15–22	1 case,	1 death.
Fort Barrancas, Fla	Nov. 18–22	4 cases,	1 "
New Orleans, La	Nov. 20–26	37 "	14 deaths.
Biloxi, Miss	Nov. 20–22	4 "	

Yellow Fever—Foreign

Para, Brazil	Oct. 16–30		25 deaths.
Havana, Cuba	Nov 11–18		11 "
Matanzas, Cuba	Nov. 3–10		2 "
Regla, Cuba	Nov. 11–18		13 "
Sagua la Grande, Cuba	Oct. 31–Nov. 6	45 cases,	1 death.
Buff Bay, Jamaica	July 30–Oct. 30	1 case,	1 "
Kingston, Jamaica	July 30–Oct 30	65 cases,	29 deaths.
Manchester, Jamaica	July 30–Oct. 30	12 "	4 "
Port Antonio, Jamaica	July 30–Oct. 30	4 "	4 "
St. Elizabeth, Jamaica	July 30–Oct. 30	1 case,	1 death.

Cholera.

Bombay, India	Sept. 5–26	54 deaths.
Calcutta, India	Sept. 25–Oct. 16	31 "
Madras, India	Oct. 9–22	7 "

Plague.

Bombay, India	Oct. 5–26	119 deaths.
Madras, India	Oct. 9–15	1 death.

Small-pox—United States.

Birmingham, Ala	Nov. 6–21	12 cases,	1 death.
Atlanta, Ga	To Nov. 17	75 "	1 "

Small-pox—Foreign.

Prague, Bohemia	Oct. 23–30	1 case.	
Rio de Janeiro, Brazil	Oct. 9–23	12 cases,	29 deaths.
Havana, Cuba	Nov. 11–18		2 "
Sagua la Grande, Cuba	Oct. 31–Nov. 6	41 "	3 "
Bristol, England	Oct. 23–30	1 case.	
Gibraltar	Oct. 24–31	1 "	
Madras, India	Oct. 9–22		2 "
Aichi Ken, Japan	Oct. 11–28	3 cases,	2 "
Fukui Ken, Japan	Oct. 11–28	1 case.	
Kanagawa Ken, Japan	Oct. 11–28	1 "	
The Hokkaida, Japan	Oct. 11–28	23 cases,	4 "
Tokyo Fu, Japan	Oct. 11–28	1 case.	
Moscow, Russia	Oct. 9–16	2 cases.	
Odessa, Russia	Oct. 23–Nov. 6	8 "	1 death.
St. Petersburg, Russia	Oct. 23–Nov. 6	16 "	6 deaths.
Warsaw, Russia	Oct. 16–30		17 "
Glasgow, Scotland	Oct. 23–30	6 "	
Barcelona, Spain	Aug. 1–31		9 "
Madrid, Spain	Oct. 26–Nov. 2		4 "

The Woman's Hospital Society has elected officers for the ensuing year as follows: President, Dr. Paul F. Mundé; vice-president, Dr. Leroy Brown; secretary and treasurer, Dr. James N. West; executive committee, Dr. Nathan C. Bozeman, Dr. E. L. H. McGinnis, Dr. J. Dougal Bissell, and Dr. George H. Mallett.

An Unfortunate Transposition of Cuts took place in that portion of Dr. Lewellys F. Barker's article on The Anatomy and Physiology of the Nervous System and its Constituent Neurones which was published in our issue for November 27th. The cut that appears over the legend "Fig. 49" should have been placed over the legend "Fig. 52"; the one over the legend "Fig. 51" should have been placed over the legend "Fig. 49"; the one over the legend "Fig. 52" should have been placed over the legend "Fig. 53"; and the one over the legend "Fig. 53" should have been placed over the legend "Fig. 51."

The Pittsburgh Academy of Medicine.—The annual address, on the subject of The Relations of Man and Microbe, was delivered on Thursday evening, December 2d, at the Hotel Henry, by Surgeon-General George M. Sternberg, of the army.

A New Medical Journal for Philadelphia.—It is announced that the first number of the *Philadelphia Medical Journal*, a weekly, will appear in January. It is to be under the editorial management of Dr. George M. Gould, formerly the editor of the *Medical News*. It will undoubtedly be a good one.

The Late Dr. William Warren Greene, of Portland.—Dr. Charles Lyman Greene, whose address is No. 150 Lowry Arcade, St. Paul, Minnesota, informs us that he is making an effort to obtain a complete list of the articles published by his father, the late Dr. William Warren Greene, of Portland. The references are scattered and difficult to obtain, and he asks that any of his father's old students or professional friends who have reprints or references to articles will kindly advise him concerning them.

Changes of Address.—Dr. Thomas E. Satterthwaite, to No. 47 West Forty-seventh Street, New York; Dr. George L. Brodhead, to No. 60 West Fifty-eighth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 21 to November 27, 1897:*

IRELAND, MERRITTE W., Captain and Assistant Surgeon, is relieved from duty at Benicia Barracks, California, to take effect upon the arrival at that post of Captain WARE, and ordered to the Presidio of San Francisco, California, for duty.

WARE, ISAAC P., Captain and Assistant Surgeon, is relieved from duty at Fort Grant, Arizona, to take effect upon the expiration of his present leave of absence, and ordered to Benicia Barracks, California, for duty.

Promotion.

CLEARY, PETER J. A., Major and Surgeon, to be Deputy Surgeon General, with the rank of Lieutenant Colonel, November 15th, *vice* WATERS, retired.

RICHARD, CHARLES, Captain and Assistant Surgeon, to be Surgeon, with the rank of Major, November 15th.

STRAUB, PAUL F., First Lieutenant and Assistant Surgeon, to be Assistant Surgeon, with the rank of Captain, November 4th, after five years' service.

Retirement.

WATERS, WILLIAM E., Lieutenant Colonel and Deputy Surgeon General, November 15th.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending November 25, 1897.*

SAWTELLE, H. W., Surgeon. To proceed to Memphis, Tenn., and assume temporary command of service. November 23, 1897.

BANKS, C. E., Surgeon. To inspect service at Buffalo, N. Y., and Philadelphia, Pa. November 22, 1897.

GLENNAN, A. H., Passed Assistant Surgeon. To rejoin station at St. Louis, Mo., *via* Washington, D. C. November 19, 1897.

MAGRUDER, G. M., Passed Assistant Surgeon. Granted leave of absence for ten days on account of sickness. November 20, 1897.

COBB, J. O., Passed Assistant Surgeon. To proceed to Delaware Breakwater Quarantine Station for temporary duty, and then to rejoin station. November 19, 1897.

WERTENBAKER, C. P., Passed Assistant Surgeon. Granted leave of absence for seven days on account of sickness. November 23, 1897.

Society Meetings for the Coming Week:

MONDAY, *December 6th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

TUESDAY, *December 7th:* New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Medical Societies of the Counties of Herkimer (semiannual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *December 8th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City Hospital; Medical Societies of the Counties of Albany and Montgomery (annual), N. Y.; Pittsfield, Massachusetts, Medical Association (private); Philadelphia County Medical Society.

THURSDAY, *December 9th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society (annual); Medical Society of the County of Cayuga (semiannual), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *December 10th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *December 11th:* Obstetrical Society of Boston (private).

Answers to Correspondents: *No. 462.*—Thyreoid treatment.

Births, Marriages, and Deaths.

Born.

LAURANS.—In New Orleans, on Friday, November 19th, to Dr. and Mrs. John J. Laurans, a daughter.

Married.

BEARD — LIPSCOMB. — In Columbus, Mississippi, on Thursday, November 18th, Mr. Ernest N. Beard and Miss Laura Lipscomb, daughter of Dr. William L. Lipscomb.

BRADY—FRASER.—In Camden, N. Y., on Tuesday, November 23d, Dr. James R. Brady, of Rochester, and Miss Grace Fraser.

BROSSEAU—LALIBERTE.—In Williamstown, Massachusetts, on Wednesday, November 24th, Dr. W. A. Brosseau and Miss Mabel Laliberte.

CARROLL—DOAR.—In Summerville, South Carolina, on Thursday, November 18th, Dr. F. Julian Carroll and Miss Lottie A. Doar.

HILL—COLUMBUS.—In North Providence, Rhode Island, on Saturday, November 20th, Dr. Charles Edwin Hill, of East Killingly, Connecticut, and Miss Grace Evelyn Columbus.

HOWARD — PARTRIDGE. — In Natchez, Mississippi, on Wednesday, November 24th, Dr. Ewing F. Howard, of Vicksburg, Mississippi, and Miss Cora B. Partridge.

KIDD—BONESTEEL.—In Troy, on Wednesday, November 17th, Mr. Andrew Kidd, Jr., and Miss Lillian Florence Bonesteel, daughter of Dr. William N. Bonesteel.

WILSON—FAIRLY.—In Wesson, Mississippi, on Wednesday, November 23d, Professor H. J. Wilson and Miss Mamie Fairly, daughter of Dr. Alexander Fairly.

ZIMMER—WOLFF.—In Rochester, on Wednesday, November 24th, Dr. John Zimmer and Miss Minnie Wolff.

Died.

GRUNEBERG.—In New Orleans, on Friday, November 19th, Dr. C. H. L. Gruneberg, in the seventy-ninth year of his age.

HYER.—In Meridian, Mississippi, on Thursday, November 18th, Dr. Wilbur F. Hyer.

O'TOOLE.—In San Francisco, on Sunday, November 21st, Dr. Michael C. O'Toole, in the sixty-sixth year of his age.

Letters to the Editor.

THE INSERTION OF AN ARTIFICIAL GLOBE IN TENON'S CAPSULE.

MEMPHIS, *November 4, 1897.*

To the Editor of the New York Medical Journal:

SIR: In regard to Dr. H. McI. Morton's article in the *Journal* for October 30th, entitled The Insertion of an Artificial Globe in Tenon's Capsule, etc., I beg to quote the following from Mr. Adams Frost (*Ophthalmic Surgery,* Carter and Frost; Philadelphia: Lea Brothers & Co., pp. 387 and 388): "To retain the advantages of Mules's operation without this disadvantage, the writer lately adopted the plan of enucleating the eye and then placing a glass sphere in Tenon's capsule, which with the muscles and conjunctiva are united over it."

In this much of the procedure Dr. Morton has been anticipated. There remains to him, however, his very ingenious method of preserving the function of the recti muscles.

E. C. ELLETT, M. D.

ACUTE BRIGHT'S DISEASE OR CARBOLIC-ACID POISONING?

EAST ROCHESTER, N. H., *November 10, 1897.*

To the Editor of the New York Medical Journal:

SIR: In the *Journal* for October 16th I noticed an article by Dr. Silverman describing a case of acute Bright's disease, the patient being a brother physician. He writes of the case as being peculiar and says that he has never seen or read of one like it. Now it seems to me from his description that he treated simply a case of carbolic-acid poisoning, the prominent symptoms being heart failure and nephritis.

The physician first called injected *pure* carbolic acid into some external piles, which to my mind is always a dangerous procedure, as there are recorded cases where six drops used in this way have produced dangerous symptoms, and a teaspoonful a fatal result. The doctor writes that there was "much sloughing," so I conclude that the amount of carbolic acid used was not small. Now, after this we hear that five grains of salol were ordered to be given every two hours. This in twenty-four hours would cause this man to take twenty-four grains of carbolic acid, which, in addition to that injected, would surely approach a lethal dose.

The symptoms recorded are almost typical, the weakened heart action with subsequent nephritis and suppression of urine and the eruption described as resembling urticaria, which probably *was* urticaria produced by the general systemic disturbance.

T. W. Luce, M. D.

Book Notices.

Traité de médecine et de thérapeutique. Publié sous la direction de MM. P. Brouardel, Doyen de la Faculté de médecine de Paris, etc., et A. Gilbert, Professeur agrégé à la Faculté de médecine de Paris, etc. Tome quatrième. Maladies du tube digestif; maladies du peritoine. Par MM. Teissier, Roque, Galliard, Hayem, Lion, Laboulbène, Hutinel, Thiercelin, Dupré. Paris: J.-B. Baillière et fils, 1897. Pp. 882. [Prix, 12 francs.]

This work, judging from the volumes which have come under our observation (the first, already noticed in this journal, and the present one), ranks with the best of the systems which have recently appeared. Although written by French authors entirely and adapted, of course, especially to the requirements of French physicians, the work presents a thoroughly comprehensive, cosmopolitan view of contemporary medicine. Its most notable feature is its modern, "up-to-date" character—if the phrase may be used here in a good sense. This is due not only to the free but judicious use of the results of the most recent investigations, but also to the way in which the great mass of older and approved knowledge has been reviewed in the light of the newer. It is naturally conspicuous in the consideration of the ætiology of diseases of the alimentary canal, in which micro-organisms are so important a factor; it is no less so in the description of modern methods of diagnosis and in new classifications and treatment which are the rational sequence of more accurate knowledge of these subjects. In the discussion of treatment broad general directions are set forth, leaving to the practitioner their application to the particular case. While the exclusion of the tedious and unnecessary details usually encountered under this title is an agreeable feature, it seems to us that an error is sometimes made in the omission of information which would have added to the practical value of the work. To cite an instance: Apropos of the treatment of gastritis, we read that among the therapeutic resources at the disposal of the physician are "physical agencies: massage, confining (or supporting) apparatus, hydrotherapy or balneotherapy, electrization." There is no further reference to electricity, nothing in regard to its value, the methods of its application, or the indications for its use. In vain, too, do we search for information regarding confining apparatus (*appareils contentifs*). As this is an exaggerated instance of omissions which after all are not frequent, it may be, perhaps, hypercritical to make the adverse criticism of a work which in other respects merits unstinted praise.

The contributors to this volume are generally eminent in the special subjects of which they treat, and several of them enjoy a more than national reputation. The book may, therefore, be commended to the American physician who wishes either to know the present doctrines of leading French authorities or, perchance, to hunt for information which possibly may have escaped the attention of the writers of our own numerous "systems." The unusually clear and concise literary style of most of the sections, notably those on diseases of the mouth and pharynx, will not detract from the pleasure of studying the volume.

The sections on diseases of the mouth and pharynx are the joint contributions of Professor Teissier and Professor Roque. A new classification of "specific anginas" is noticeable; it includes two classes of bucco-pharyngeal diphtheria, the unibacillary toxic form and the polymicrobian infective form, and the classes of bucco-pharyngeal pseudo-diphtheria, streptococcic, coccic, staphylococcic, pneumococcic, and the colon bacillary. Each of these forms is described separately. The suggestion that in every suspected case, in addition to making a culture, a fragment of the false membrane should be stained with Roux's blue solution and immediately examined is of practical value. Most American physicians will read with more or less surprise that the course of acute catarrhal amygdalitis may be complicated in young adults by the occurrence of orchitis or oophoritis similar in nature to the same complications in the course of mumps.

L. Galliard furnishes the sections on diseases of the œsophagus and intestines. The latter contains excellent discussions of the bacteriology of acute and chronic enteritis and of intestinal occlusion and inflammation of the vermiform appendix. We believe that most American surgeons would, however, dissent from the statement that the author's unconditional condemnation of exploratory puncture as dangerous and useless in subacute appendicitis was opposed to the views of "the Americans." The recommendation to use extreme caution in the employment of morphine in any form of enteritis will be generally accepted.

G. Hayem and G. Lion treat of diseases of the stomach. The large amount of work which they have done in this direction qualifies them to write with authority, and, in view of the increasing interest in the chemistry of the stomach, this section is of unusual importance. The modern methods of physical and chemical examination of the stomach, the chemistry of the normal gastric processes, the changes found in abnormal conditions, and their relations to pathological changes and to symptoms are concisely described. In the authors' opinion, the relations between chemical and pathological changes are so constant, unless they are disturbed by the superimposition of artificial inflammation caused by drugs, that the former are absolutely correlative with the latter. Their views on the treatment of gastritis are radical. The main indications for treatment are furnished by the data obtained by physical and chemical examination; modifications are suggested secondarily by nervous dyspeptic symptoms. Hygienic, physical, and operative procedures furnish the physician's armamentarium. Special dietaries founded on chemical types, theoretically correct, are clinically impracticable. All medicines, with the exception of inert powders and dialytic salts, are discarded.

The chapter on intestinal parasites was written by A. Laboulbène; that on infantile dyspepsia and diarrhœa by Hutinel and Thiercelin.

In the section on diseases of the peritonæum, by E. Dupré, there is a description, under the title *peritonisme,* of an interesting class of cases occurring "frequently enough" which present the syndrome of peritonitis but without any anatomical lesion. These cases of hysteria must add greatly to the diagnostic perplexities of our French *confrères.*

The absence of an index is to be regretted; it can not be replaced in a work of this size by a table of contents.

The Diseases of Women. A Handbook for Students and Practitioners. By J. Bland Sutton, F. R. C. S. Eng., Surgeon to the Chelsea Hospital for Women, etc., and Arthur E. Giles, M. D., B. Sc. Lond., F. R. C. S. Edin., Assistant Surgeon, Chelsea Hospital for Women. With One Hundred and Fifteen Illustrations. Philadelphia: W. B. Saunders. London: Rebman Publishing Co., Ltd., 1897. Pp. 5 to 436. [Price, $2.50.]

More interest has been aroused among gynæcologists by the appearance of this book than is usual in the case of a student's manual, owing to the fact that a former work by one of the authors (*Tumors, Innocent and Malignant*, by J. Bland Sutton) has been so widely and favorably received.

The present volume has much to commend it, both to the student and to the practitioner, although it contains little that is new. The desire of the authors, as stated in the preface, has been to "relate facts and describe methods," and to this object they have very strictly adhered, so that but little matter of a theoretical nature has been introduced.

The subject matter is very conveniently divided. The first three chapters deal respectively with the anatomy and physiology of the reproductive organs of women and with the methods of examination. Then follow twenty-two chapters in which the diseases of these organs are concisely described. Two chapters are then devoted to the subject of diagnosis, and the remaining chapters treat of gynæcological operations.

Perhaps the most noticeable section is that in which the bacteriology of the vaginal secretion, in health and in disease, is described. The account of Döderlein respecting the vagina bacillus and its rôle in preventing the growth of pathogenic micro-organisms is followed in a brief but clear study of the subject.

One is somewhat surprised at the small amount of space allotted to diseases of the endometrium and at the classification of chronic inflammation of the lining membrane of the cervix and body of the uterus together, which is perhaps in some respects an innovation.

The chapters on fibroids and on tubal gestation, though brief, are very complete, and will be read with interest. The chapters on operative procedures are clear and well illustrated and are characterized by an absence of the confusing details which often render the written description of operations so difficult for a student to understand.

The chief advantages of the book, we think, lie in the clear, concise style in which it is written, in its many illustrations, in its good index, and especially in the absence of those tedious presentations of diverse theory that, in so many of our text-books, serve only to confuse the student.

Text-book of Medical and Surgical Gynæcology. For the Use of Students and Practitioners. By R. W. Garrett, M. A., M. D., Professor of Obstetrics and Gynæcology in the Medical Faculty, Queen's University, Kingston, etc. Containing over One Hundred Illustrations. Kingston, Ontario, 1897. Pp. 8–9 to 419. [Price, $2.50.]

This book is not built upon the ordinary lines of the treatise upon gynæcology; it is a distinct advance over the ordinary work upon this subject. It is also distinctly a novelty as the work of a Canadian author and in a Canadian dress, and is heartily welcomed. The author acknowledges his indebtedness to American authorities in his preface, so that we are at once prepossessed in his favor, his environment being a good one. He notes in his introduction the indebtedness of the general surgeon to the gynæcologist for most of the suggestions in abdominal surgery, and while we are inclined to think that he gives the gynæcologist rather more credit than justly belongs to him, his plan is preferable to that which ignores the gynæcologist. His descriptions of the anatomy of the pelvis are unusually good and are distinctly superior to most of the contributions to this subject with which we are familiar. This is especially true of his description of the anatomy of the broad ligaments, and there is no work of this character which is better suited for a book of reference.

The chapter on bacteriology in its application to gynæcology is distinctly an innovation, and is so terse and lucid that it is not at all confusing even to one who is not well versed in the technicalities of the subject. Success in gynæcological therapeutics is declared to be based chiefly upon cleanliness; simplicity in technique is encouraged. The subject of the ætiology of pelvic disease is treated in a comprehensive and philosophical manner, with a minimum of verbiage. In general, the aim of the author seems to be to teach the principles which form the basis of gynæcology, rather than a mere accumulation of details. He seems rather more favorable to the medical treatment of the diseases peculiar to women than is usual with gynæcologists, and in this respect we are compelled to take issue with him. His description of the usual gynæcological operations is equally clear with the remainder of his text, and the illustrations are good. There is no padding with multitudinous and imperfectly reported cases; from beginning to end the object of the author is plain and he proceeds to it in a straight line. It is very refreshing to meet with such a book in this era of verbose and prolix utterances, and we congratulate the author heartily on the success of his efforts.

Notes on Pathology. For Students' Use. By W. A. Evans, B. Sc., M. D., Professor of Pathology, Medical School of the University of Illinois. Chicago: The W. T. Keener Company, 1897. Pp. 4 to 472. [Price, $1.50.]

In this volume the author presents an enormous mass of facts relating to nearly every department of cellular pathology. The work is evidently intended to relieve students of the necessity of taking notes of lectures on pathology, and the composition of the volume resembles very strongly the disconnected and vague data that a student might put down in order to prepare himself for an examination. That the book may be received with satisfaction by the particular body of students to whom it is directly addressed can hardly be doubted, but it is equally certain that the work contains nothing of value, either in plan or in detail, for the general student in pathology. As to the subject matter, the pages bristle with indefinite, inaccurate, and often incorrect, statements.

Many of the parenthetical phrases into which the author condenses the sentences are quite unintelligible. Moreover, the facts stated often follow one another in such illogical disorder that most instructors in pathology would find in this feature of the work a serious objection to its use.

We recommend the volume to the author's students only in association with a well-recognized text-book, and can not wish to see it in general circulation.

A Quiz of Histology, General and Dental. By Charles B. Reed, M. D., Professor of General Histology, Northwestern University Dental School, etc., and Frederick B. Noyes, B. A., D. D. S., Professor of Dental Histology, Northwestern University Dental School. Chicago: The W. T. Keener Company, 1897. Pp. vii–203.

In this volume the instructors in histology at the institution named on its title-page have prepared for their students a quiz manual of histology which is sufficiently complete for the requirements of students in dentistry.

A special chapter presents the subject of dental histology at greater length. The language is well chosen, concise, and clear. The chapter on dental histology will be found, as the writers profess, abreast with much of the recent literature on this subject, and on account of this feature the manual may find some general circulation. Yet the student who uses this or any other quiz book on histology will be greatly handicapped by the lack of illustrations, which, as in the works of Schaeffer, Stohr, Piersol, and others, render very great assistance in the comprehension of the subject.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D., Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. Mitchell Bruce, M. D., F. R. C. P., London, England, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume II. Seventh Series. Philadelphia: J. B. Lippincott Company, 1897. Pp. xii–371.

To review thoroughly such a wide range of subjects as this volume presents would be here an impossible task; we select accordingly those which appear to be most worthy of mention. The articles which appear under the head of general medicine and therapeutics are especially good, notably a lecture by Kelly, of Philadelphia, on the diagnosis and treatment of incipient locomotor ataxia. An excellent clinical picture of the early and later stages of this disease is here presented, and, what is as rare in lectures of this kind as it is desirable, citation of cases is avoided. Rather does the author strive to impress upon his audience the importance of certain constant symptoms and the significance of symptoms less constant. As to the treatment in the early stages, the question of whether it is wise to subject the patient to an antisyphilitic course of mercurials and iodides is differently regarded by neurologists. Erb believes that in by far the great majority of cases this treatment is not injurious and is in a large number of cases of great worth. Among those who believe that this treatment is at times injurious are Gowers, Osler, Strümpell, and Oppenheim.

In an article on severe cases of chorea the frequency of mental disturbance is emphasized. One case is cited in which, apart from the usual motor disorders, delusions and hallucinations were the most conspicuous symptoms, presenting a picture of the condition known as "insanity of chorea." The results in the treatment of such cases are not always satisfactory.

There are two articles pertaining to fractures, one by Roberts, of Philadelphia, and the other by A. Pearce Gould, of London. They represent two totally different points of view. The former may be said to represent the old school in the treatment of fractures, the idea that for some reason or another the fragments should not be immediately put in apposition and kept there (the cases in question were simple, uncomplicated fractures of the tibia and fibula). To quote: "The fracture-box is a convenient method of dressing fractures of the tibia and fibula, since the degree of pressure and the position of the padding can be changed in accordance with the tendency to displacement and the amount of swelling." The English author, on the other hand, insists on immediate and complete apposition of the bony parts, and says that the normal outline should be completely restored. The importance of restoring the normal balance of the part and of maintaining the normal weight-line of the body in fractures of the lower third of the leg is not mentioned in the first-named of these articles. In the latter article these conditions form the keynote of the treatment. One case requiring operation is reported in Gould's article, that of a simple fracture of the fibula in its lower third in which union had taken place at each end of the line of fracture but had been prevented in the centre by the interposition of periosteum and fibrous tissue. The extreme pain which accompanied the condition, caused by the tension of the fibrous tissue in certain movements of walking, is the interesting feature of the case.

BOOKS, ETC., RECEIVED.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and specially prepared Articles on Treatment. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D. (Univ. of Pennsylvania), Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. Mitchell Bruce, M. D., F. R. C. P., London, England, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume III. Seventh Series. Philadelphia: J. B. Lippincott Company, 1897. Pp. 12 to 360.

Text-book of Materia Medica for Nurses. Compiled by Lavinia L. Dock, Graduate of Bellevue Training School for Nurses. Third Edition, revised and enlarged. Eleventh Thousand. London and New York: G. P. Putnam's Sons, 1897. Pp. xl–240. [Price, $1.50.]

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Volume II. B—Bywater. Washington: Government Printing Office, 1897. Pp. 954.

Moral Principles and Medical Practice; the Basis of Medical Jurisprudence. By Rev. Charles Coppens, S. J., Professor of Medical Jurisprudence in the John A. Creighton Medical College, Omaha, Nebraska, etc. New York, Cincinnati, and Chicago: Benziger Brothers, 1897. Pp. 8 to 222.

Louis Kuhne's Facial Diagnosis. Illustrated. A Free and Abridged Translation, with Notes by August F. Reinhold, M. A. New York: A. F. Reinhold, 1897. Pp. 18 to 106.

Tumeurs mixtes du voile du palais. Par le Professeur Paul Berger. Paris: Félix Alcan, 1897. Pp. 74.

Das Verhältniss der experimentellen Bakteriologie zur Chirurgie. Antrittsvorlesung gehalten am 10. Juli, 1897, in der Aula der Universität Leipzig von Paul Leopold Friedrich. Leipzig: Wilhelm Engelmann, 1897. Pp. 46.

Praxis der Harnanalyse. Anleitung zur chemischen Untersuchung des Harns nebst einem Anhang Analyse des Mageninhalts. Von Dr. Lassar-Cohn, Universitätprofessor zu Königsberg i. Pr. Hamburg und Leipzig: Leopold Voss, 1897. Pp. 38.

Investigaciones sobre la sueroterapia en la tuberculosis. Por J. Ferrán. Barcelona: Imprenta y Litografia Blasi, 1897. Pp. 16.

A Handbook on the Annexation of Hawaii. By Lorrin A. Thurston.

Transactions of the American Surgical Association. Volume the Fifteenth.

Fiftieth Anniversary of the Hartford Medical Society. Founded September 15, 1846. Proceedings at the Celebration, October 26, 1896, at Hartford, Connecticut.

A Report of the Influence of Milk in spreading Zymotic Disease, with a Tabular Analysis of Forty-eight Outbreaks. By Ernest Hart, D. C. L., of London. [Reprinted from the *British Medical Journal.*]

Waterborne Typhoid. A Historic Summary of Local Outbreaks in Great Britain and Ireland, 1858–'93. With a Tabular Analysis of Two Hundred and Five Epidemics. A Report prepared for the Parliamentary Bills Committee of the British Medical Association. By Ernest Hart, D. C. L.

Headaches from Nasal Causes. By Sarget F. Snow, M. D., of Syracuse, N. Y. [Reprinted from the *Medical News.*]

General Considerations upon Major Anæsthesia. By Robert H. M. Dawbarn, M. D. [Reprinted from the *Atlanta Medical and Surgical Journal.*]

Three Practical Points in the Management of Fractures at the Elbow Joint. By Robert H. M. Dawbarn, M. D. [Reprinted from the *New York Polyclinic.*]

A Further Case of Primary Tuberculosis of the Breast. By Charles A. Powers, M. D., of Denver. [Reprinted from the *Annals of Surgery.*]

The Scientific Spirit in Practical Medicine. By Louis Faugères Bishop, M. D. [Reprinted from the *Medical Record.*]

Notes on the Pathology and Bacteriology of Appendicitis. By Charles F. Craig, M. D., of Danbury, Connecticut. [Reprinted from the *New England Medical Monthly.*]

A Certain and Successful Method of Shortening the Round Ligaments. By J. H. Kellogg, M. D., of Battle Creek, Michigan. [Reprinted from the *Transactions of the Michigan State Medical Society.*]

Hereditary Deafness. By Lewis S. Somers, M. D., of Philadelphia. [Reprinted from *Medicine.*]

Some Cases of Cystitis in Women. By Edgar Garceau, M. D., of Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Atropine Rhinitis. By Lewis S. Somers, M. D. [Reprinted from the *Laryngoscope.*]

A Clinical Report on the Use of Argonin in Gonorrhœal Ophthalmia. By E. C. Ellett, M. D., of Memphis. [Reprinted from the *Memphis Medical Monthly.*]

The New Psychology. By W. E. Scripture, Ph. D. (Leipzig), Director of the Yale Psychological Laboratory. With One Hundred and Twenty-four Illustrations. London: Walter Scott, Ltd. New York: Charles Scribner's Sons, 1897. Pp. xxiv–500. [Price, $1.25.]

Miscellany.

Typho-lumbricosis.—Recently, says M. Pierre Marie in the *Journal des praticiens* for November 6th, Chauffard published an account of an important observation, in which he drew attention to the curious clinical characteristics of lumbricosis of a typhoid form. More recently still Tauchon, in his thesis, referred to three cases of a typhoid form. The author thinks it is a singular thing that a few lumbrici in the gastro-intestinal tract will give rise to a disease the symptoms of which, by their development and grouping, give the impression of a really grave affection. Briefly summed up, the symptoms are usually as follows: From the onset gastro-intestinal symptoms predominate: Loss of appetite, fœtid breath, saburral tongue, vomiting, variable diarrhœa, and very marked swelling of the abdomen with a sensation of distention. To these symptoms may be added rather marked nervous troubles, such as somnolence and a state of depression which later on becomes almost an impairment of the mental powers; sometimes there is vertigo or there are even convulsions, and the face assumes a wretched appearance. Cephalalgia, without being very violent, is generally manifested rather distinctly. Fever is rather intense, without, however, exceeding 104° F., for usually the evening temperature ranges between 102.1° and 102.6°, and the morning temperature, between 100.2° and 102.1.° Moreover, the typical stages presented by the temperature in dothienenteritis are not noted. The spleen is but little if at all increased in size. Sometimes, but not so often as in typhoid fever, there is epistaxis. With regard to the rose-colored spots, they seem to be absent, at least in the observations known at the present time.

Concerning the prognosis of the disease, it is stated in the most recently published accounts of cases that recovery occurred in them all, and it would seem, says the author, that the affection should be considered a benign one. In reality, he says, it is not so; if in these cases the termination was so favorable, it was because an exact diagnosis had been made in time and the proper treatment applied. But if the nature of the case is not recognized the termination may be fatal, either as a direct consequence of the lumbricosis itself or because of an intercurrent affection of the respiratory or the gastro-intestinal system.

When, on the contrary, the nature of the disease is recognized the effects of the anthelminthic treatment are surprising. As an instance of this the author refers to a case which came under his observation, a full account of which is published in the same journal. The febrile conditions, he says, continued in the patient for at least a month, and the sulphate of quinine remained without any effect on the temperature; daily doses of salol, which had been prescribed with a view to intestinal antisepsis, also remained without effect. In order to demonstrate this more completely the author administered eight grains of calomel, and on the following morning the patient passed a lumbricus. At two different times, at an interval of a day, half a grain of santonin was given (this small quantity was given because of the weakened condition of the patient and the presence of albuminuria), and a second worm was passed. Other doses of santonin did not produce a fresh evacuation of the parasite, but a singular action on the temperature was discovered. After the ingestion of the santonin, in the evening or on the following day, the temperature lowered at least from four to five tenths of a degree. This action was all the more manifest, as that of the quinine sulphate had been hardly anything. There was here, the author thinks, an express indication, as much from a diagnostic point of view as from a therapeutic, the influence of the lumbricosis on the continuation of the febrile condition being thus distinctly demonstrated. A rather singular fact, he says, was that this antithermic action of santonin was produced, even when the ingestion of this medicament was not followed by the rejection of a worm, in such a way that the lowering of the temperature seemed to be due to a direct effect of the drug on the organism. It is, moreover, very probable, he says, that in this case it was only apparent, although he thinks our knowledge of the mechanism of the production of the different symptoms in lumbricosis is yet too rudimentary to enable us to conclude anything on this subject. It is known, in fact, that three theories may be advanced; one is sustained by the older writers, who held that the ascarides acted above all mechanically, and by their disturbing action in certain portions of the intestinal tract caused a series of pathological reflexes. The second theory is maintained by Chauffard, who regards lumbricosis as a true infection in which the lumbrici, on the one hand, borrow from the intestinal medium the pathogenic germs which are found there, and by the irritation which they cause in the mucous membrane excite their virulence; on the other hand, the lumbrici intervene in an active way either by their excreta or by their presence alone. A third theory is held by Chansou and by Tauchon, who attribute the affection to the characteristic virulence of the ascarides, which virulence may be demonstrated experimentally by injecting guinea-pigs with the juice of ascarides.

Of these three theories, the last two only seem to the author to correspond with the symptoms observed by him in the case referred to. It can hardly be admitted, he says, that it was the presence of the three ascarides in this case, which, by a purely mechanical action, had been able to determine the series of permanent symptoms which were observed. It is evidently necessary that the ascarides should act by another and more specific process, but whether by infection or by poisoning the author would not say; in any case, the lowering of the temperature produced by the santonin seems to indicate that this drug, in causing either the death or an uncomfortable condition of the ascarides, brings about at the same time a marked diminution of their injurious action.

A Case of Poisoning from Eating Lobster.—The following case is recorded by Dr. Charles Schram, of New York, in the *Medical News* for November 20th: The patient was a married woman, twenty-nine years old. Before the illness began she had received a shock which had caused mental depression and impairment of appetite. Four days before the author saw her she had eaten some boiled lobster; other members of the family had also eaten it. Three days later persistent and uncontrollable vomiting began, and the vomitus at first consisted of food taken that morning, then of bile, then of mucus, and finally everything swallowed was at once rejected. Concomitant symptoms were obstinate constipation, frontal headache, dizziness, excessive thirst, gastric and abdominal pain, severe pain in the limbs and in the small of the back, and ringing in the ears. These symptoms had continued up to the time of the author's first visit. The patient was anxious, irritable, and apprehensive as to recovery. Her face was pale; the tongue was thickly coated; the breath was fœtid; the skin was hot and dry; and the pulse was hard, from 112 to 116 a minute. The lungs were normal; the heart sounds sharp, but not indicative of disease; the abdomen was somewhat distended and tympanitic. The abdominal tenderness was general, though more acute over the epigastrium and the course of the colon, particularly at the flexures of the latter; there was gurgling on pressure.

Dr. Schram prescribed eight grains of calomel in divided doses, but through a misunderstanding the patient received eight tablets, each containing a fourth of a grain; she was given boiled water in abundance, and brandy in drachm doses repeated every two hours, no food being allowed. In the evening the temperature rose to 102.5° F., and remained near this point until the crisis of the illness, which occurred three days later. The day following the author's first visit the vomiting ceased. As the bowels had not moved, she was given eight grains of calomel in four equal doses, which caused two small liquid movements. There was no amelioration of the symptoms except the emesis.

In the mean while, says Dr. Schram, a specimen of the blood had been sent to a bacteriologist, who reported that Widal's test had given a positive reaction, consequently, the author states, he placed the patient on a fluid diet and the use of sponge baths and β-naphthol-bismuth, beginning with five grains every three hours.

Three days afterward the general condition seemed much improved. As no evacuation of the bowels had occurred during the previous thirty-six hours, an enema of salt water was ordered. This resulted in a large semisolid movement, and was followed in half an hour by a severe chill, after which the patient collapsed and became pulseless. When the author reached the bedside she was bathed in a cold perspiration; the pulse was about 136, feeble, but regular. There were slight dyspnœa and excessive thirst; the abdominal distention and tenderness had diminished. The mind was clear, although the patient was anxious and momentarily expected death.

The stool following the enema had been carefully examined and in it, apparently not much altered by its passage through the alimentary canal, was found a piece of lobster. This must have been in the canal just a week, says the author. The patient gradually rallied during the night, the pulse and temperature becoming normal. During the week following there was extreme prostration, and there were from four to six liquid stools daily, containing much mucus but no blood. The urine was turbid during the three or four days following the crisis, but no blood or albumin was present. At the present time the patient is up and about.

In reaching a diagnosis, continues Dr. Schram, three diseases were considered—namely, inflammation of the vermiform appendix, subacute gastro-intestinal catarrh, and typhoid fever. The first, though strongly indicated by the emesis and rapid pulse, was considered improbable, for the local manifestations were slight as compared with the subjective symptoms. The patient being an adult, the symptoms seemed too grave to be attributed to a simple gastro-intestinal catarrh. The history was rather short for typhoid fever; yet it was most favored in making a diagnosis. The positive reaction to the Widal test seemed conclusive. The crisis, however, and the subsequent course of the illness demanded a radical change in conclusions. The author states that at one time he was forced to consider the possibility of an intestinal perforation following an appendicular inflammation, but he was glad to conclude that such could not have been the case, as, following the collapse, the patient's condition gradually improved. It seemed to him, therefore, that the illness was due to the ingestion of lobster, the toxines of which had been absorbed, and that the violent crisis was the result either of poisoning with naphthol or of the absorption of a large quantity of ptomaines at one time. The patient had received in all thirty-five grains of naphthol, four doses of which had been taken the preceding day, and if she had been particularly susceptible to the drug the author thinks the symptoms of poisoning would have been manifested at that time. Larger doses, he remarks, have been administered over much longer periods without ill effect. It is, therefore, he thinks, safe to conclude that the amount of the drug received by the patient was not the cause of the symptoms. Further, the urine did not display evidences of naphthol poisoning. The supposition of ptomaine poisoning remains. To this, he says, the patient, owing to her temporarily depressed condition of health, was peculiarly susceptible. Symptoms resembling those presented in this case have been observed, says Dr. Schram, in other instances subsequent to the ingestion of lobster. The severe chill and prostration were apparently due to the overwhelming discharge of poison into the system. Dr. Schram is of the opinion that the reaction to the Widal test lends additional confirmation to this diagnosis; as Aresdarnoro, quoted by Vaughan and Novy, in eleven cases of salmon and sturgeon poisoning, detected in the livers, spleens, and kidneys of the fish, and also in the same organs of those who ate of them, bacilli resembling, but not identical with, typhoid bacilli. Did not, he asks, such bacilli give the typhoid reaction with Widal's test, and produce the ptomaines which, apparently, poisoned his patient?

The English-speaking Practitioner in Italy.—The *Lancet* for November 13th publishes the following in a letter from a correspondent in Rome: "At the last General Medical Congress held here it was moved and unanimously carried that foreign medical practitioners professionally engaged in Italy should undergo a State examination or qualify at one or the other of the Italian schools in order to legalize their practice. In consequence of this step a deputation of the English-speaking practitioners has just waited on Signor Serena, under secretary of state for the home department, to protest against such action. His Excellency announced in reply that arrangements in the direction proposed by the Italian Medical Congress had not yet been taken, but that in any case, the government, before giving legal effect to the innovation contemplated by the congress, would put itself in diplomatic communication with the governments of the other powers (Great Britain included), with a view to obtaining for Italian practitioners in those countries the same privileges enjoyed in Italy by foreigners. The matter will probably rest there. It is said that foreign dentists, against whom the edict referred to in my last letter has now gone forth, in the event of their being 'contumacious,' are to be denounced to the judiciary authority. This is a very hard measure for the practitioners of a sister profession and singularly ill-advised as regards the interests of Italy herself. The presence of an English-speaking dentist in her chief centres of foreign sojourn is one of several attractions for the Anglo-American world, without which these places would in great measure cease to be resorted to. Italy, of course, must be credited with knowing what is best for her own advantage and to 'order her house' accordingly; but the exclusion of the English-speaking dentists from her cities can not but strike the outer world as in more ways than one a suicidal step. By the admission of Italians themselves these practitioners possess in their home qualifications an even higher guarantee of professional training and efficiency than any to be found in Italy, while it is an open secret that no Italian when he can afford the choice prefers a compatriot dentist to one imported from America or the British Isles. There is, however, another feature in the circular to which I alluded affecting a still more considerable public than that professionally interested in dentistry—I mean the practitioners of medicine. The Marchese di Rudini, in his address to the prefects, sets out by reminding them that Article 23 of the Legge sulla Sanità at present in force forbids the foreign medical graduate from practising unless, in addition to his home qualification, he possesses an equivalent one of some recognized Italian school. Article 140 of the Legge of November 14, 1859, he proceeds, confirms the above, but—the words that follow must be given textually—'eccettua da tale divieto i medici ed i chirurghi stranieri espressamente chiamati per casi speciali e quelli che esercitano la professione presso i soli forestieri' (it excepts from such prohibition the physicians and surgeons of foreign nationality who are expressly called in for special cases and those who exercise their calling among foreigners only). It is primarily on the ground that this second Legge makes no mention of 'dentists' that the minister of the interior would exclude those of foreign nationality from practice, thus falling back on the letter of the law to the ignoring of its spirit. Conscious apparently that this is not a high-minded or statesmanlike proceeding, his Excellency goes on to justify his mandate by the argument that 'degrees' for special departments of medicine and surgery being now compulsory in Italy, and that 'dentistry' being a department of surgery, the foreign dentist, not being a medical graduate, can not avail himself of the privilege of the foreign physician or surgeon, and must take an Italian degree or forfeit the right to practise even among his compatriots. This looks very like quibbling, to say nothing of the fact already noted that qualifications in dentistry are commonly held by Anglo-American practitioners in that department implying as good a preliminary training in medicine as that of any holder of an Italian dental degree. British and American odontology, however, may be trusted to vindicate its own rights, and its medical sister can only wish it Godspeed. Meanwhile it is satisfactory to have the Marchese di Rudini's reaffirmation in so recent a document of the right of the English-speaking physician and surgeon resident in Italy to form a *clientèle* among his compatriots in that country, strengthening as it does our impression derived from Signor Serena's answers to Dr. Santini last summer that the Italian government has no immediate desire to legislate in Dr. Santini's sense, and, by passing sentence of banishment on the English-speaking practitioner, to deter from sojourning in Italy that Anglo-American world from which her needy and sorely taxed population derives so essential a part of its income."

The Cytoryctes Vaccinæ.—In an editorial in the *British Medical Journal* for November 6th, the writer refers to some series of experiments on variola and vaccinia which have aroused great interest among Continental pathologists. The question referred to, he says, is the nature, parasitic or other, of the cell contents in the region of variola and vaccinia vesicles. In 1886, he states, Van der Loeff, and in 1887 L. Pfeiffer, independently described protozoa in the contents of variola pocks, but the first really important work on the subject was that of Guarnieri, of Pisa, in 1892. Guarnieri found that the pathological changes under notice began in some of the cells of the spinous layer as an enlargement which did not affect the nucleus. Eventually there developed in the protoplasm a clear space surrounding the nucleus, and often occupying two thirds of the cell; this contained a number of bodies varying in size from that of the nucleus of an epithelial cell to that of a micrococcus, and staining deeply and homogeneously with most dyes. They were evidently of a viscous consistence, and were never found within the nuclei. Guarnieri, continues the writer, found similar bodies in vaccine pustules artificially produced in sheep and rabbits, and was able also, with the strictest precautions, to produce them in the rabbit's cornea. He examined epithelial cells from the lacrymal secretion in the hanging drop, and found that in many of them there was a small speck looking like a bit of amber and pushing the nucleus to one side. On the warm stage, at a temperature of from 100.2° to 104° F., slow amœboid movements were seen in these bodies. The granules were better seen in sections, and Guarnieri describes them as multiplying in two ways—by ordinary binary fission and by the formation of gymnospores. No special membrane could be detected covering them, they appeared to lie free in the hollowed-out cell protoplasm. It should be added, says the writer, that Guarnieri spoke of the sporulation with some reserve, as he had not been able to observe it in fresh specimens. Guarnieri's results were criticised in 1893 by Massari and Ferroni, who stated that they had obtained similar cell changes by the action of irritants on the skin, and who regarded the granules described by him as being mainly derivatives of the nuclei, and in a few cases leucocytes. On the other hand, L. Pfeiffer, in 1894, published a paper in which he maintained that they were the young forms of the *Monocystis epithelialis* described by him in 1887 as occurring in vaccinia and variola pustules; he has since, however, abandoned this view. Guarnieri's results were still further confirmed in 1894 by Ruffer and Plimmer and by Jackson Clarke. The former observers failed to detect spore formation, but the latter saw mitotic figures and also chromosomes resembling the sporogonia of coccidia; subsequent investigators have not been able to see these changes. In 1895 von Sicherer confirmed Guarnieri and L. Pfeiffer's observations by demonstrating similar cell-contents as the result of the injection of fresh child lymph into the cornea. In the same year L. Pfeiffer extended these results by comparing the effects of inoculation and irritation upon a large number of corneæ in different animals. Inoculation gave rise to the products already described, but irritation with croton oil, osmic acid, etc., never caused their appearance. Wasielewski, the writer goes on to say, has recently reinvestigated the whole subject, making his primary object the exclusion of all other irritative influences than the inoculation from the cornea. By careful asepsis he has been able to inoculate fifty rabbits and ten guinea-pigs without once causing hypopyon, and has thus been able to follow the changes resulting up to the twenty-first day. The materials employed were glycerinated vaccine, fresh child lymph, and the clear watery contents of the variola vesicle. The preparations were fixed by a special method, and the sections stained in the manner used by Hertwig in the demonstration of the chromosomes in ascaris. Wasielewski regards the appearances observed as due to a parasite—*Cytoryctes vaccinæ*—which reaches its maximum development on the second or third day after inoculation. In a typical case within fifty hours almost every cell within an area of a square millimetre contained foreign bodies, while leucocytes were absent from both the inoculation track and the surrounding epithelium. These bodies were round, and had the average diameter of 0.5 micromillimetre; they frequently but not invariably lay in a clear zone surrounding the nucleus. The largest—from five to eight micromillimetres in diameter—lay in the cells immediately surrounding the inoculation track. They consisted of a clear outer and a deeply stained inner zone. Two kinds seem to be distinguishable by means of the granules which they contain; in one the granules are few, equal in size, and regular in arrangement; in the other numerous, variable in size, and irregularly placed. These differences may be associated with multiplication changes, in the first form by spore formation, in the second by budding. What appear to be transitional forms have also been observed. The author alleges that his researches confirm the existence of a cell parasite whose complete life history has not yet been determined.

Injuries to the Ulnar Nerve.—The *Clinical Journal* for November 10th contains a report of a clinical lecture which was recently delivered by Dr. William H. Bennett, of Cambridge, at St. George's Hospital, in which the author states that he has observed several cases of injury to the ulnar nerve, and considers them sufficiently interesting to record, because they illustrate the conditions most commonly met with in nerves which have been subjected to injury. The following case is an example: The patient was a girl aged twenty-four years, who was admitted on February 2d. The history she gave was that in November, 1896, she fell downstairs and cut her left elbow with a broken tumbler. The wound was sewed up by a practitioner, but nothing was done to the nerve; probably the injury to the nerve was not then recognized. The wound healed well, but great weakness followed, especially in the fourth and fifth fingers; loss of sensation was observed, but the date of this was not noted. Within the month before her admission the fingers had become flexed into the palm, and had become shiny in aspect, as digits supplied by nerves which have been divided do. There was a puckered scar about two inches long just above the internal condyle of the humerus. The interossei were wasted; there was loss of power, with absence of sensation over the area of the hand supplied by the ulnar nerve. In addition to this the hand was very cold. Here again, says Dr. Bennett, there was only one thing to do in the way of treatment—namely, to expose the nerve and see what its condition was. That accordingly was done on February 5th. He made an incision over the nerve, and found it intimately mixed up in the cicatrix at the inner side of the elbow. Having, after a good deal of trouble, isolated the nerve very freely, he found that it had been completely divided, the upper end terminating in a bulbous enlargement; the lower end was also slightly bulbous, the two divided ends being connected by a thin strand of connective tissue. This, therefore, was a well-marked case of complete division of the ulnar nerve. It was quite clear that the girl had no chance of recovering her lost power of sensation, etc., unless the nerve ends were reunited. The question then arose as to the proper situation at which the section of the nerve tissue should be made in order to freshen the ends for the purpose of bringing them together by suture.

At first, continues the author, it might perhaps be thought that the best thing to do would have been to cut away the bulbous enlargement altogether, leaving only healthy nerve tissue; but that was neither necessary nor desirable, because there were enough young nerve fibrils in the bulbs to bring about a cure, supposing the two ends were properly approximated. It was clear that, for the purpose of bringing the ends thoroughly together, the less nerve substance removed the better. The smaller the distance between the cut nerve ends, the less would have been the tension after their approximation. There was another reason for not sacrificing the whole of the bulb in these cases. The bulbous ends of divided nerves, says the author, are mostly made up of fibrous tissue, which being firm and tough allows stitches passed through it to hold well. If the whole of the bulbous material had been removed, and the stitches passed through the nerve tissue only, they would have been very apt to cut through if there had been any tension at all, and failure of the operation would have been a necessary sequence. Within twenty-four hours of the operation the girl, who before had had no feeling whatever in the fingers supplied by the ulnar nerve, had a distinct return of sensation; the fingers were warm, and she could feel a touch well. *Three days afterward the improvement had disappeared, and she had no sensation in the affected fingers at all;* in point of fact, except that the fingers were not quite so cold as before the operation, she was in the same condition as when she first came to the hospital. That at first would appear to be a rather alarming event, continues the author, and in those unaccustomed to these cases it might lead to the impression either that the operation had failed, for some reason not easily explained, or that the stitches had given way and the nerve ends had become separated again. But this by no means follows, he remarks, in cases in which these symptoms occur. In this case sensation reappeared within a week and went on increasing, the fingers became warmer and warmer, and the power in the muscles began to return, so that when the patient left, about six weeks after the operation, she was in a fair condition, and had lost that peculiar shiny aspect of the fingers which she had when she came into the hospital, and was rapidly regaining the power in the muscles supplied by the injured nerve. The points of interest in this case, says the author, were the immediate return of sensation after the approximation of the nerve ends, its disappearance for a time soon afterward, and its reappearance followed by steady progress toward recovery a week later.

The author gives a detailed account of another case—one of ascending neuritis—because he considers it interesting, and an excellent illustration of the comparatively hopeless nature of these cases of nerve injury in which ascending pain is a prominent symptom. In such cases, he says, when operations fail the question as to other treatment arises. The patient's condition is distressing; it is probably hopeless from a truly curative point of view, but still temporary relief may be sometimes given in various ways. Constitutional treatment effects little except in gouty patients, who derive at times great benefit from drugs commonly used in the treatment of gout, notably colchicum. Local treatment, however, seems more certain to give relief, at least for a time. The most effectual local methods (after nerve-stretching) seem to be longitudinal scarification of the affected nerve, free application of the thermo-cautery along the course of the nerve at frequent intervals, and the frequent repetition of multiple flying blisters over the nerve.

Dr. Bennett states that in spite, however, of all treatment the symptoms usually return, and in the end defeat the practitioner. There is one very singular thing, he thinks, about the pain in these cases of ascending neuritis—namely, that except when there is some exacerbation of pain the expression does not indicate that the patient is the subject of acute suffering, and not until the very advanced stage are there any signs of exhausting disease. This sometimes makes it all the more difficult, he says, to be quite sure about the genuine nature of these cases; the patients look so well and hearty that there is an inclination to regard them as malingerers. Even electrical tests are not always conclusive.

A Case of Verminous Abscess due to the Oxyuris.—The November number of the *Revue mensuelle des maladies de l'enfance* devotes considerable space to an article by Dr. R. Frœlich on verminous tumors in children, in which the following case is recorded by the author, who considers it interesting from more than one point of view: The patient, a boy eleven years old, was brought to the hospital at Nancy for a small tumor in the intergluteal fold, near the anus. The tumor had appeared eight days before and been accompanied by moderate pains and some fever.

On examining the gluteal region the author discovered a small protuberance of about the size of a nut, situated three centimetres from the anus, in the intergluteal fold. The upper part of the tumor was red, and the borders were of a coppery yellow; the base was hard and encroached on the buttocks. There was no erosion of the skin. Pressure was painful. An examination of the anal mucous membrane revealed the presence of two oxyures, which were two centimetres and a half long and very lively. By introducing a finger into the rectum and placing the index finger of the other hand on the intergluteal tumor, the author distinctly felt fluctuation; the collection of liquid seemed to make the skin bulge, but it was remote from the rectum.

Dr. Frœlich thought it might be a circumanal abscess, and he made an incision in the skin on its most prominent part. He was greatly surprised to see enormous numbers of oxyures escape from the incision; they were wound together in a mass, but rapidly unwound themselves and struggled in the pus with an extraordinary vitality.

The author thought that there must be some communication between the abscess and the rectal cavity, but an examination revealed no such communication. He then carefully examined the rectal mucous membrane with the aid of a speculum ani; it was red and presented in places hæmorrhagic points. The author parted the rectal mucous membrane very carefully and assiduously, thinking to find an opening, but in vain. Near several of these ecchymotic points there existed small and not very deep ulcerations into which the probe penetrated one or two millimetres. These small anfractuosities existed also on the anterior and posterior wall of the intestine. During the course of this examination several oxyures presented themselves above the rectum. A grooved sound introduced into the abscess, with the finger in the rectum, enabled the author to ascertain that there had been between the two cavities a tissue at least two centimetres thick.

The abscess was drained and washed with corrosive sublimate. Recovery took place in sixty days. Two enemata, each consisting of nearly eight ounces of Van Swieten's liquor, were administered every day. After a week of this treatment the oxyures in the rectum seemed to have disappeared; but an examination with the speculum revealed still a few in the intestine. Fresh enemata of corrosive sublimate caused their disappearance five days afterward.

The patient, according to his own account and that of his mother, had been tormented for several months with nocturnal itching occasioned by the parasites. He had given the worms to two of his brothers and to his mother; a child of two years old only had escaped.

When the patient was discharged he was again examined with the aid of the speculum. The hæmorrhagic points had disappeared and the small ulcerations had filled up. Three days after he left, a patient in the same ward, who had been operated upon for tumor of the rectum, presented several oxyures in the wound. He stated that the boy, during his stay in the hospital, had touched the wound several times and had helped in dressing it.

The author's conclusions are as follows: 1. Oxyures may cause around the rectum and at a certain distance from the intestine abscesses in which they swarm in great quantities. 2. These abscesses may be produced by the penetration of the inflamed mucous membrane and the rectal walls of a female with eggs, which are laid in the cellular tissue, or else the eggs may be deposited there in very large quantities by the lymphatics. The first hypothesis seems to the author to be the most probable. 3. A dirty person may contaminate an entire family by carrying the eggs on his fingers. 4. These eggs seem to require eight days or more in which to become transformed into adult worms. 5. Van Swieten's liquor in enemata gives good results, but its use should be continued some time after the disappearance of the parasites.

The Treatment of Lupus Vulgaris with Currents of Hot Air.—In the *Presse médicale* for October 30th Dr. Hollaender, of Berlin, calls attention to a method of treatment the purpose of which is to cause the slow and progressive mortification of the lupous patch, without permitting any direct contact between the caloric source and the lesion; that is, to give rise to the formation of an eschar by beginning with the simple heating of the diseased zone. By proceeding in this way, he says, there is the certainty of entirely limiting its field of action and of preventing any radiation from influencing the surrounding healthy tissue.

The instrument employed by the author for causing this progressive mortification is simple, very easily handled, and entirely capable of fulfilling the purpose for which it was designed.

The author states that, so far as he is able to judge from his personal experiments, hot air employed according to his method seems to owe its curative properties to its antseptic and hæmostatic power. This, he thinks, may also render it useful in gynæcology to combat metrorrhagia and the infections of the genital organs in woman.

Dr. Hollaender has used this method of treatment only in common tuberculous lupus, but he has experimented with it in a large number of cases, and the results obtained enable him to affirm that it is of real service.

Concerning the manner of operation, it is necessary to distinguish between two degrees in this cauterization with hot air—namely, absolute cauterization and relative cauterization. In cases of extensive lupous patches where there is no healthy skin, and in regions where cicatricial retraction is not to be feared, the physician should not hesitate to employ absolute cauterization. But in cases in which the lesions are situated on certain parts of the head or the face, such as the nose, the ears, the lips, the eyelids, etc., relative cauterization is indicated, for it does not produce ugly cicatrices; it is also employed in cases in which the lupous patches have invaded almost the entire face and neck.

Dr. Hollaender has observed an important fact—namely, that the healthy skin and the diseased skin do not react in the same way under the influence of the current of hot air. In the first case, when the current of air is thrown on the healthy skin it whitens and becomes shriveled in consequence of a vaso-constriction which causes ischæmia of the region touched by the heat. In the second case, on the contrary, the lupous patch, which is vascularized by blood-vessels of new formation, forms a very distinct protuberance above the healthy tissues, a veritable swelling. At the end of a few days the healthy skin regains its normal appearance, whereas the lupous zones begin to mortify. This simple phenomenon, says the author, certainly proves the efficacy of this method of treatment.

In employing relative cauterization, the author goes on to say, a single application is not sufficient for the destruction of the entire lesion; generally it is necessary to repeat it a certain number of times; under these conditions a lasting recovery may be looked for.

The author states that, judging from the results recorded up to the present time, he feels justified in recommending the use of currents of hot air as an excellent method of treating common tuberculous lupus. It has been successful especially in the very extensive diffuse forms, and it may lead to satisfactory amelioration even in hopeless cases. In the ordinary forms it is well not to count upon a definite recovery until after three years of care and treatment.

The Prognosis in Heart Disease.—The *Lancet* for November 6th contains an account of the Bradshaw Lecture which was recently delivered by Dr. E. Markham Skerritt before the Royal College of Physicians of London, of which the following is the substance: The foundation of prognosis, says the author, is an accurate appreciation of the changes produced by disease and of the pathological nature of the processes concerned; a knowledge not only of what alterations have occurred in shape, size, structure, or function of an organ or part, but of how they have been caused, and what is the ultimate history of the agencies to which they are due. Where the heart is concerned error in prognosis may arise in connection with either of these two factors; on the one hand, by mistake as to the actual physical condition of the organ; on the other hand, owing to failure to realize what will be the result of the various forces which are rightly recognized as at work. In early life, the author thinks, the discovery of the lesion is usually easy, while with advancing years comes the time of degeneration, which in its gravest forms often can not with certainty be recognized. Youth, he says, is the period of acute inflammations, which are commonly discovered with ease by skilled observers, but no one can surely foretell the future while acute endocarditis is running its course. Diagnosis is simple, definite prognosis impossible.

It is important to recognize, says Dr. Skerritt, what is the position of physical signs in heart disease and how far they can be relied upon as evidence of the nature and extent of existing morbid changes and of their tendencies. It can not be denied, he says, that many of the errors in the prognosis of heart disease, and especially of valvular lesions, arise from too great a reliance upon the indications of the stethoscope. It will disclose the murmurs and therefore indicate to which of the various classes of valvular defect any case belongs; but here its function ends; beyond this it does not reveal what is in store for a patient. A true estimate of the gravity of a lesion can be gained only by a general survey of the case in the broadest possible light; to determine first what has been its effect upon the heart itself and then how far its influence has extended beyond this organ. If it is found that a murmur is present, no matter at which orifice, and that there is no change in that part of the heart upon which the strain first comes; if it is also known that this murmur has existed long enough for the effects of increased work to be manifested, then, says Dr. Skerritt, it follows that the lesion is trivial and stationary, and may remain so for an indefinite time. On the other hand, if hypertrophy or dilatation, or both, exist, their degree is a test of the actual interference with the heart in its work. Due weight should also be given to the character of the pulse, to such symptoms as dyspnœa, palpitation, and syncope, and to any evidence of interference with the pulmonary or systemic circulation or of the presence of associated disease. It is necessary not only thus to check the special physical signs of valvular disease, but also, sometimes, to estimate the value of symptoms by physical signs.

The importance of history, the second factor in prognosis, the author goes on to say, is never underrated by the practical physician. By it are determined the origin of any morbid state, the length of time that it has existed, and its tendency to development in one direction or in another, and an accurate appreciation of the information which it conveys is of the greatest value. Where valvular defect is due to acute endocarditis it is important to know whether there is a liability to a fresh onset of the malady in which it originated. For instance, when endocarditis arises during the course of an acute specific disease such as scarlet fever, which usually makes one attack only, the prospect is better than in the case of acute rheumatism, in which recurrences, which are common, often light up fresh endocardial inflammation. Or the history shows that a murmur may be due, not to endocarditis, but to weakness of heart following acute illness or originating in anæmia, in which event there is a reasonable prospect of cure. Or the course is perhaps preventable or more or less removable, as when avoidable muscular strain produces cardiac dilatation. Or it is a diathetic condition, such as gout, which can be kept in check, but not eradicated. Or the affection may originate in a persistent and irremediable condition, as when dilatation and hypertrophy result from chronic Bright's disease or from the arterial degeneration of age. In every case a recognition of the cause of a cardiac lesion, and therefore of the degree to which it may be influenced or removed, enters into a rational prognosis.

It is difficult to overestimate, Dr. Skerritt continues, the value of a knowledge of the length of time that a heart lesion has existed; it is of the greatest importance in prognosis. Endocarditis, for instance, must be estimated by the results which it produces—the damage which has been done to the heart in a given time is a test of what will happen in the future. Prognosis thus becomes a problem. If the heart is in a certain state at the end of a certain time, what, asks the author, will be its condition in six months, in a year, or in five, ten, or twenty years? The longer the interval that has elapsed since the acute inflammation the more certainly can this question be answered. Concerning the importance of the history of a case, Dr. Skerritt relates the following, which, he says, well illustrates it: The patient said he had been suffering from aortic aneurysm. The existence of disease had been discovered by accident and had not before been suspected, the patient feeling in his usual health. The heart was enormously enlarged and hypertrophied; the impulse was so forcible as to shake the chest-wall and could be plainly felt through the clothes. The author says that although he was of opinion that the physical signs did not justify the diagnosis of aneurysm, yet they were not such as altogether to negative its existence. But he was much struck with the point already mentioned—that the trouble had been discovered by accident and not from symptoms complained of by the patient, who was exceptionally intelligent and observant and had led an active life. It appeared to him that a lesion accompanied by cardiac action differing so decidedly from the normal, if of recent origin, could not arise without attracting the attention of the patient; and on careful inquiry it came out that the strong beating of his heart had been noted in his early adult life; and, further, that when he was a little child his father once came into the nursery when the boy was undressed and observed something which led him to bring the family medical adviser, who examined the chest. Dr. Skerritt therefore concluded that the patient had grown up with the lesion that existed, so that to him it gave no abnormal sign. It followed that aneurysm, which would be a recent development, did not exist. The prognosis attaching to the latter being thus set aside, the question arose as to what the future had in store. It was argued that, if compensation was so complete that the heart, although thus enormously enlarged, had been able through all these years to do its work in such a way that an active man had no suspicion that it was not normal, there was no reason why it should not long remain equally efficient. As a matter of interest, and as showing how inconclusive were the physical signs, the author states that, as opinions so divergent were given upon a subject of such importance, the patient was examined in London by two eminent authorities, one of whom came to the conclusion that aneurysm existed, while the other agreed with him in his view of the case. The patient, after hearing either diagnosis fully argued by its supporter, made up his mind that the balance of evidence was against the existence of aneurysm, and laid his plan of life accordingly. This was nearly eight years ago. Dr. Skerritt has examined him at intervals since and been unable to detect any signs of advancing disease; he is not conscious of any trouble; he leads a busy and fairly active life and looks the picture of health. Dr. Skerritt remarks that he has gone fully into this case because it is a forcible illustration of the value of a knowledge of the past as a guide to the present and the future. A most important decision turned upon the history, and the result has proved that reliance was rightly placed upon its indications.

The knowledge of the course which is usually run by a given form of heart disease often can not be applied, says the author, with sufficient accuracy to be of much value. A lesion that in one instance may end fatally in a few months may in another be compatible with long life and practically good health. The relative gravity of valvular derangements is variously estimated by different authorities. Walshe, says the author, places them as follows: Tricuspid regurgitation, mitral regurgitation, aortic regurgitation, pulmonary constriction, and aoritic constriction, tricuspid constriction and pulmonary regurgitation being too little known to be placed in the list. The worst results follow those lesions which directly obstruct the circulation behind them. Of all valvular lesions aortic obstruction is the most favorable, the left ventricle frequently undergoing hypertrophy sufficient to overcome the obstacle at the orifice of the aorta.

The prognosis of chronic valvular disease resulting from a non-recurrent specific fever, the author continues, is more favorable than the prognosis of that originating in acute rheumatism, as further attacks of the latter may occur, bringing with them fresh risk to the heart. But the prospect is better when the valvular change is due to the endocarditis of rheumatic fever than if it results from inflammation that is chronic from the first, for, while the former may remain quiescent, unless the valve is attacked afresh during a recurrence of the fever, the latter is commonly due to some persistent cause leading to progressive inflammation with its increasing valvular deformity.

Concerning the chronic degenerative changes in the heart wall, says Dr. Skerritt, when fatty degeneration is once established it tends to increase, owing to the persistence of its cause. In like manner no prolonged consideration can be devoted to the prognosis of hypertrophy and dilatation. As their cause is usually persistent, and often progressive, the secondary cardiac enlargement is correspondingly permanent and tends to increase. The greater the hypertrophy in proportion to dilatation the better will the extra work be done and the difficulty be overcome, but only while the nutrition of the heart remains good. When degeneration begins in the hypertrophied wall, the balance between work and power is disturbed, never to be restored.

The liability to sudden death is an important aspect of prognosis. It may occur in certain forms of chronic valvular disease, in dilatation, where degenerative changes exist, and from rupture of the heart or an aneurysm of this organ. It is well known that the lesion which carries with it by far the greatest risk of sudden death is aortic regurgitation. It is said by some authorities that this accident is likely to happen even when there is comparatively little regurgitation. Walshe, says Dr. Skerritt, quotes a case in which there were absolutely no symptoms of disease, and there was neither hypertrophy nor dilatation of the ventricle, and yet the patient dropped down dead. He mentions, however, that the superficial pulses were decidedly visible. The author says he has not seen the tendency to fatal syncope unless the regurgitation was considerable and the ventricle was correspondingly enlarged, and has never met with the characteristic pulse of aortic regurgitation when dilatation of the ventricle was not present, and on theoretical grounds, he says, it is not plain how a pulse indicating considerable regurgitation can exist while dilatation is absent, since the ventricle has to contain an increased amount of blood. Short of the existence of distinct secondary dilatation, he says, he should regard a patient with aortic regurgitation as safe from fatal syncope. On the other hand, it must be borne in mind that many in whom aortic regurgitation and its accompanying changes are extreme die, not suddenly, but by gradual increase of trouble. And, further, that there is less tendency to this mode of death when mitral regurgitation is added to aortic. One other valvular lesion sometimes ends abruptly, that is, mitral regurgitation. This does not often happen and is not to be feared unless compensation has failed. The remaining varieties of valvular disease may be regarded as practically free from this risk. The same can not, however, be said of dilatation, where the weak thinned wall sometimes unexpectedly ceases work.

It is, however, the degenerations which supply the majority of the instances of sudden death. Angina pectoris is notably a malady which tends to terminate in the way under consideration; and in fatal cases some change in nutrition is practically always found—usually fatty degeneration of the muscular substance, and especially affection of the coronary arteries interfering with the nutrition of the heart wall. Fatty infiltration, if excessive, may end in sudden syncope; this is much more likely to happen in the weak heart of true fatty metamorphosis. But of all conditions the danger is most imminent when a degenerate heart has to face increased arterial tension. Here the type of cardiac action indicates the peril that threatens. The pulse is quickened; it may be irregular and intermittent or fairly regular, and is often of good value, but its notable feature is high tension. The short and toneless first sound of the heart is hurriedly followed by a ringing aortic sound. This kind of action marks a ventricle that can barely hold its own until the strain is taken off by the closure of the aortic valves, and it is plain that the patient lives on the brink of a precipice over which a trifling extra demand upon the heart may at any time determine his fall.

The last division of prognosis, which takes into consideration the special features of a given case, includes many factors, such as social status, sex, temperament, general habits, and the condition of other organs; but their influence he does not discuss in detail. Excepting the state of other viscera, perhaps the most important of these is position in life, he says. If the sufferer from cardiac trouble can be placed in an environment as nearly ideal as is attainable by the lavish expenditure of care and money, his prospects differ much from those of another who has to work for his bread in the station in life which he may chance to occupy when the malady overtakes him. This is exemplified in the case of acute endocarditis.

It is of the greatest importance, says the author, to keep the heart as far as possible at rest for some considerable time after an attack of acute endocardial inflammation. Rest is the first essential to the cure of inflammation and the removal of its products. This is so obvious in the case, for instance, of a joint that it is always recognized, and the surgeon never grudges the time, however long, spent in the endeavor to secure a healthy limb. And it behooves the physician to keep just as clearly in view the state of the recently inflamed valve. When the social position of a child suffering from recent endocarditis will allow, it is the author's practice to enjoin the retention of the recumbent posture for from three to six months. After this, if the murmur persists, the gentlest exercise is gradually allowed; but for several years all violent exertion is forbidden. At the same time great attention is paid to the general health.

In the case of older patients the treatment is approximated to this as closely as circumstances will allow. The prognosis of acute endocarditis much depends upon this one question, whether or not the heart can for some time be saved all but the "irreducible minimum" of work. Any trouble and pains are well expended that will lessen the prospect of valvular disease in after life.

To restore hope to life, to give the patient to the full the benefit of such doubt as may attach to the nature of his condition and the uncertainty that too often attends the prediction of his future, surely, says Dr. Skerritt, this is not only justifiable but also right, and the lightening of the depressing influence of fear and dread will in itself tend to avert the danger that may threaten.

The Melancholic Form of Typhoid Fever, and the Employment of Widal's Agglutinant Serum Reaction as a Means of Diagnosis.—Infectious agents, says M. Taty, in the *Lyon médical* for November 7th, are frequently the cause of psychical disorders which enter into the complex group of acute deliriums, stupors, or hallucinatory mental confusion. In a large number of cases a careful clinical examination will enable the physician to recognize or at least lead him to suspect this cause; in others, on the contrary, the mental troubles are so predominant, and the physical troubles so slightly accentuated, so very little different from those usually met with in many insane persons, that the observer is often deceived and led to diagnosticate a simple mental disease, instead of the cerebral localization of an infectious disease.

Typhoid fever is one of the most prolific sources of troubles of this nature. Not only does it give rise to cerebral lesions of long continuance, and favor the ulterior outbreak of mental troubles, but it dissimulates its evolution also under very varied appearances, from acute delirium, febrile or non-febrile, to melancholic conditions more or less tinged with mental confusion.

In a case of the latter nature M. Taty employed Widal's serum reaction test, and it enabled him to make an exact diagnosis and to recognize, under the appearance of anxious melancholia, a masked form of typhoid fever.

This case, he thinks, demonstrates that typhoid fever may assume anomalous ways concealed under the aspect of anxious melancholia with self-intoxication, and even simulate what some authors have described under the name of mental alienation of a double form, not betraying itself to the most careful observation, except by slight physical symptoms.

For this reason the author considers it necessary to resort to the serum test in depressed mental conditions accompanied by gastro-intestinal troubles, however slight they may be, as well as in acute delirium and in cases of mental confusion, in this way hoping to be able to isolate from the complex group of infectious manias those which are of typhoid origin, and to be assured also of the diagnosis and the treatment.

M. Taty thinks that the serum means of diagnosis should be employed in all cases of acute delirium, of stupor, of mental confusion, and also of melancholia in its forms of rapid evolution. By our so doing, he says, many typhoid-fever patients may be saved from useless confinement in an asylum and, in any case, a rational diagnosis and treatment will be assured within reasonable limits.

At the meeting of the Lyons Société des sciences médicales at which M. Taty's paper was read, a report of which is to be found in the same journal, M. Pierret stated that the fact observed by M. Taty marked a new step in the study of the connecting links between general and mental medicine.

It was a common occurrence, he said, to receive typhoid-fever patients into the insane asylums. Some presented during the course of the disease symptoms which rendered a diagnosis easy. Others were attacked with anomalous forms which might present the type of any mental affection, the syndrome of the degenerated, for example.

This was not peculiar to typhoid fever, for it might be seen in all infectious diseases and in all forms of poisoning.

M. Pierret stated that he had examined M. Taty's patient and felt impressed that it was a case of typhoid fever, and that he had been expressly opposed to the patient's confinement in an asylum.

This measure, he said, was useless in similar cases, since it was only for a short time that the patients had need of a particular watchfulness, and it was always prejudicial to the family, to whom the stigma of degeneracy would be attached. With regard to the patients, they would greatly profit by an exact diagnosis which enabled the physician to adopt the rational treatment—that is, medicinally—of typhoid fever, rheumatism, syphilis, etc., which might be the causes of cerebral troubles. For typhoid fever the serum reaction was a valuable test.

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NOTES ON A CASE OF TRAUMATIC INJURY OF THE PNEUMOGASTRIC, HYPOGLOSSAL, AND SYMPATHETIC NERVES.

By WILLIAM HIRSCH, M. D.

In spite of the numerous experiments and the careful observation of pathological cases which have been published during the last few years there are still many points in the physiology of the cervical sympathetic, as well as some cranial nerves, which are by no means clear and which have to be made the subject of further investigation. The various differences in the result of experiments on the one hand and pathological cases on the other have been correctly attributed to the fact that physiological results of the animal experiment can be applied to the human being only *cum grano salis;* and, secondly, that diseased conditions are always apt to be complicated, and therefore may perhaps misrepresent the real state of affairs. Neither of these objections can be advanced in cases of traumatic injury, and these cases are therefore of special value for physiological study.

The following case may perhaps in some measure contribute to the elucidation of some doubtful points:

On the 8th of March, of this year, F. B., laborer, forty-nine years old, was sent to me with the diagnosis of paralysis of the left vocal cord. The patient gave the following history: He had always been in good health, never had syphilis, and was temperate in his habits. He said he had met with the following accident last October: While he was cleaning a revolver a shot was discharged; the bullet entered his hard palate at about its centre, and, according to his statement, emerged from a point on the left side of the nose near the orbit. He became unconscious and was taken to a hospital, where he remained for about seven weeks. Since the accident his speech has been somewhat affected, "the tongue feeling heavy." In eating, particles of food would settle under the left side of the tongue, so that he had to remove them with his finger. His voice had disappeared altogether, and he could only whisper. It returned, however, to some extent after several weeks, but remained harsh and rough. He did not see so well with the left eye as with the right; "everything appears darker on this side." He has vomited a great deal since the accident, and up to several weeks ago he vomited after nearly every meal. This symptom, however, has now disappeared entirely and his appetite is normal. For several months he was troubled by a very marked salivation. Whenever he woke up from sleep his mouth was full of saliva, and he was often kept awake by this annoying symptom. Several weeks ago, however, this symptom disappeared entirely.

He never had any pain or any other subjective symptom. The objective examination revealed the following status: Moderately well-nourished man of medium size. At the left side of the root of the nose near the orbit is a scar, which, according to his statement, was caused by the exit of the bullet. Another scar may be seen in the middle of the hard palate where the bullet had entered. The pupil of the left eye is about two thirds the size of that on the right. The fissure of the left eyelid is smaller than that of the other side; the lower left eyelid does not stand higher than the right one, but still it was clear that there was no ptosis due to paresis of the levator palpebræ superioris, as the patient was able to move the eyelid perfectly well in looking upward. The left eyeball is somewhat sunken, but on palpation no difference appears in the consistence of the two eyeballs. The ophthalmoscopic examination reveals perfectly normal and similar conditions in both eyes. Both pupils react to light and accommodation, but the reaction to light of the left pupil seems a little slow. There is no difference of the two halves of the face in respect to nutrition, color, sensation, and motility. When the patient opens his mouth a marked difference between the two halves of the tongue is revealed, the left half being narrower and more corrugated than the right, but there is no fibrillary twitching; at the base the left half appears a little more prominent than the right. To the touch the left half feels thinner than the right. When the tongue is kept quiet in the mouth, the tip deviates slightly to the right, while when it is extended it deviates considerably to the left side. Within the mouth all movements of the tongue can be performed without difficulty, but the protruded tongue can not be moved from left to right beyond the middle line. Sensation and taste are equally good on both sides. Neither the faradaic nor the galvanic current produces any reaction of the affected side of the tongue. While deviation of the protruded tongue can be corrected by the application of the faradaic current to the right side, there is no reaction on the left side whatever, even to the strongest current that the patient can endure. The indirect irritation from the hypoglossus is similarly followed by normal reaction on the right side, but remains without effect on the left. The muscles of the left half of the pharynx are paretic. In phonation the pharyngeal arch is drawn higher on the right side than on the left, and the uvula is also drawn toward the right side. Both the anterior and posterior pillar are less prominent on the left than on the right side.

The laryngoscopic examination reveals a complete paralysis of the left vocal cord. In phonation the right cord passes the middle line to approach the left cord, which is perfectly immovable. With regard to the sensation of the larynx, no disturbance could be made out. The muscles of the suprahyoid and infrahyoid regions show no difference on the two sides. On repeated examination of the heart its rate was found constantly accelerated (one hundred and eight a minute). In every other respect the heart as well as the other internal organs are in perfectly normal condition. The urine has a specific gravity of 1.20 and contains no albumin or sugar.

From this combination of symptoms it was clear that the man was suffering from an injury of the vagus, the hypoglossus, and the cervical portion of the sympathetic nerve. Naturally, the question now arose: How could a bullet which entered the hard palate and passed out through the root of the nose have injured these nerves? At first the possibility of a fracture of the base of the skull was taken into consideration. Against this theory stood the fact that the external branch of the spinal accessory nerve was not affected, the sterno-cleido-mastoid and trapezius muscles being unimpaired. Secondly, we should expect the laryngeus superior to be affected also, if the vagus had been injured in its passage through the skull. The glossopharyngeal nerve also ought to have been injured, while, on the other hand, the affection of the superior cervical ganglion of the sympathetic could hardly be explained on this theory. Finally, it was unlikely that a fracture of the base of the skull extensive enough to injure these nerves should not have caused more severe cerebral disturbances or have injured the large vessels. Having excluded the possibility of a fracture, the only thing left to assume was that these nerves were injured directly by the bullet, and that the same had not passed out at the root of the nose, in spite of the scar at this place and the statement of the patient that the bullet had been found in the room by his daughter after the accident. The region where the injury was most likely to have taken place was at the point where the vagus and the hypoglossus are in close relation to the superior cervical ganglion of the sympathetic nerve.

A Röntgen picture was now taken of the patient's head, and plainly showed the bullet in the level of the spinous process of the fourth cervical vertebra. On palpation, a slight tumor was now appreciated in the region indicated by the skiagraph, and on incising under cocaine I had no difficulty in extracting the bullet, which was imbedded in the sterno-cleido-mastoid muscle.

Cases of injury of the cervical portion of the sympathetic nerve have been published in great number. The following symptoms have been observed: 1. Narrowing of the pupil. 2. Narrowing of the fissure of the eyelid. 3. Retraction of the bulbus. 4. Diminished consistence of the bulbus. 5. Reddening and increased temperature of the ear and face on the affected side. 6. Hyperidrosis and anidrosis. 7. Increased salivation. 8. Atrophy of the affected half of the face. 9. Diminution of the heart's action. 10. General nervous symptoms, headache, hemicrania.

The narrowing of the pupil is the most frequent symptom in cases of paralysis of the sympathetic. The size of the affected pupil is generally one half to three fifths (Nicati) of the normal size. In my case the meiotic pupil is of two thirds the size of the other. The shape of the affected pupil is, according to all observers and also in my case, perfectly round. In nearly all cases, including my own, the reaction to light is stated to be somewhat less prompt on the affected side. The explanation of this symptom, offered by Rieger and Forster, according to which the paralysis of the dilator paralyzes also the antagonist, has been sufficiently refuted by Möbius. But that Möbius's assumption of a rigidity of the sphincter analogous to a paralytic contracture is also unsatisfactory, this author admits himself, for in this case the contraction of the pupil in accommodation ought to be affected no less than in reaction to light. I think that this symptom can be explained by the simple fact that the external stimulant for the reflex action—*i. e.*, light—is stronger on the normal than on the affected side, the normal pupil admitting more light to the retina than the contracted one. The sluggishness of the reaction seems to me to be apparent rather than real, and to depend on the fact that in shading the eye in making the test the affected pupil does not dilate as it does on the normal side, and, therefore, not being flooded with light to the same extent, will not respond as promptly as the unaffected pupil.

In Möbius's case the pupil on the normal side could be dilated by the application of the faradaic current to the region of the cervical sympathetic, while on the affected side this was not possible. I did not succeed in my case in dilating the pupil on either side by the faradaic current.

Experiments have been made in these cases with various drugs on the pupils. Nicati found that atropine widely dilated the normal pupil in a quarter of an hour, while the affected pupil was dilated more slowly and irregularly, and even after half an hour was smaller than the other. If Calabar was now put into the eyes, the affected pupil began to contract after ten minutes, and was fully contracted after half an hour, while in the normal pupil the dilatation persisted even after this time. Möbius, on the other hand, found that eserine caused less contraction on the affected than on the normal side, and that atropine thereupon dilated the affected pupil more promptly and rapidly than the unaffected.

The results of my experiments with drugs harmonize rather with Nicati's than with Möbius's experiments. Equal and large doses of atropine produce equal degrees of dilatation on the two sides, the original difference in the size of the pupils being maintained, however, until the normal pupil attains its maximum dilatation, when that of the affected side continuing, the two pupils ultimately become of equal size. An exactly parallel course is followed on the two sides if eserine is applied to the previously dilated pupil; but now, of course, the affected pupil contracts more rapidly and attains its maximum meiosis sooner than that on the normal side. Similar relations are observed when eserine is applied first and atropine afterward.

The narrowing of the fissure of the eyelids is, according to all authors, due to a paralysis of Müller's lid muscles. In most cases the lower lid stands higher and the upper lid lower than on the unaffected side. In my case, as also in a case of Remak's, the lower lid was not affected, but, as said above, the condition differed from an ordinary ptosis by the perfectly unimpaired ability to raise the eyelid.

The retraction of the bulbus has been referred by Nicati to, first, the reduction of the size of the bulbus; second, the atrophy of the fat in the orbit; and, third, the paralysis of Müller's musculus orbitalis. Möbius says correctly that atrophy of Müller's muscle could not alone suffice to produce the reaction, as this muscle is only rudimentarily developed in man, and that, furthermore, in most cases the retraction of the bulbus takes place only during the later course of the affection. However, in my case the bulbus is not reduced in size, and we are scarcely justified in assuming an atrophy of the fat of the orbit so long as no other atrophy can be noticed. According to Möbius, most cases of retraction of the bulbus have been associated with hemiatrophy of the face, but my patient does not exhibit any difference of the two facial sides. How soon after the injury the retraction of the bulbus took place I can not say, but when I first saw him, which was about five months after the accident, this symptom was very marked. As I mentioned before, there is also no change in the consistence of the bulbus, as is reported in several other cases, and therefore there is no base for the assumption of a trophic disturbance in my case. The theory of Bärwinkel, that the retraction of the bulbus is due to a decreased tonus of the supraorbital artery, the central artery of the retina, and the ciliary artery, which, owing to their relaxation, could easily be compressed, and so produce a disturbance in the nutrition of the bulbus, has been sufficiently refuted by Möbius, who calls attention to the fact that in various cases of this kind arterial hyperæmia of the retina could be shown. In my case I could never detect a difference in the arteries of both sides by the ophthalmoscopical examination. It would appear, therefore, that none of the grounds mentioned affords a satisfactory explanation of the enophthalmus.

With regard to the condition of the vessels of the head, the various reports differ in many respects. While in most cases there was a dilatation of the blood-vessels of the ear and face on the affected side, there are other cases where just the opposite condition took place, the affected half of the face being pale and cool. As this latter condition only occurred after the lapse of some time—generally a number of years—Nicati described three different stages of paralysis of the sympathetic nerve. In the first stage there is intense reddening of the affected half of the face, combined with a rise of temperature and hyperidrosis; in the second stage there is a moderate hyperæmia, and in the third stage there are pallor, reduced temperature, and anidrosis. That this division into three stages does not correspond to the general clinical experience has been amply proved by Seeligmüller and Möbius. However, they admit that in all cases where the symptoms of the third stage are present, a long period, mostly several years, has elapsed since the injury. In contradiction to this stands a case of Jacobsohn's, in which distinct pallor of the affected side of the face set in immediately after the injury. This case proves sufficiently that Nicati's view, that the symptoms of his third stage are due to secondary atrophy, is erroneous. We are unable to decide to-day whether this difference in the various cases is due to the sympathetic containing vasomotor as well as vasodilator fibres, or whether, perhaps, some of these symptoms are due to irritation rather than to paralysis of the nerve. My patient has no vascular symptoms at all. There is no difference in color and temperature, and the application of heat and cold is followed by similar reactions on the two sides.

The frequently observed symptom of hyperidrosis had formerly been attributed to the dilatation and the anidrosis to the contraction of the blood-vessels; but numerous cases have since been observed where hyperidrosis existed together with contraction and anidrosis with dilatation of the arteries, which facts proved sufficiently the independence of these symptoms. Besides that, we know now from physiological experiments (Adamkiewicz, Vulpian, Luchsinger) that the regulation of the sweat function is conducted through an independent set of nerve fibres which, according to Adamkiewicz and Vulpian, are to a great extent contained in the cerebro-spinal nerves. Which rôle the sympathetic nerve plays in this mechanism, and why in some cases of injury of this nerve we meet with hyperidrosis and in others with anidrosis, we do not know. Perhaps we have also here sometimes an irritation of the nerve instead of a paralysis.

Hemiatrophy of the face has been observed in most cases only after the lapse of considerable time. With the exception of Jacobsohn's case, where the atrophy was noticed about two months after the operation, the shortest interval between the injury and the first appearance of this symptom was nine months (Seeligmüller and Möbius). In most cases several years had elapsed when this condition of the face was first noticed. That also this symptom could not be dependent on the condition of the blood-vessels is shown by several cases in which hemiatrophy existed without any vascular symptoms whatsoever. Experiments of Gaule, who, after irritating and injuring the sympathetic ganglia, found certain changes in various muscles, make it probable that the sympathetic nerves have also trophic functions, which would explain this peculiar symptom.

Increased salivation has been observed only in two cases besides my own (Lewinski, Remak). A very peculiar phenomenon was observed in Remak's case (Israel): When the patient lay on his back during sleep the increased flow of saliva did not only stop, but gave way to a very unpleasant sensation of dryness on the tongue and palate. In my case just the reverse took place. The patient was often disturbed in his sleep by the intense flow of saliva. Although Claude Bernard and others observed paralytic secretion of the submaxillary gland after cutting the sympathetic nerve, the comparatively short persistence and the transitory nature of these symptoms make it probable that in my case, as well as in the others, Remak's view holds good—*i. e.*, that we have to deal with a reflex irritation from the injury through the chorda tympani.

Retardation of the heart's action (Möbius) and other nervous disturbances, like headache, hemicrania, etc., have been observed only in a very few cases, and the latter symptoms were probably produced only indirectly by the trauma.

Paralytic affections of the tongue due to extracranial lesions are rare in comparison to those of central origin. However, there is quite a number of cases on record now in which injuries, caused either by operations or accident, have produced a paralysis of the hypoglossus, so that the condition of the tongue in peripheral lesions of this nerve has been carefully studied.

Many authors who have written on this subject mention the interesting fact that in spite of a very marked hemiatrophy the movements of the tongue are frequently only very little affected, and sometimes even not impaired at all. The reason for this is perhaps the fact that some muscles of the tongue may receive accessory motor impulses from other nerves—*e. g.*, the lingualis longitudinalis from the chorda tympani, and the palatoglossus from Meckel's ganglion; and, secondly, that the muscles of the other side may become accustomed to perform certain movements compensatorily. My case would be an illustration for this supposition. Shortly after the accident the man was not able to move his tongue to the affected side, so that he had to remove morsels of food with his fingers, but gradually this symptom disappeared, and after a few months the movements were nearly normal, although the atrophy had progressed, and there is still to-day complete absence of electric reaction.

When the tongue rests in his mouth the tip points to the right, and when the tongue is protruded it deviates to the left, to the affected side. This is generally the condition in cases of this kind. The deviation of the tongue within the mouth is due to the retraction of the normal side by its unimpaired tonus, while the deviation of the protruded tongue to the opposite direction is caused by the unaffected genioglossus pushing the tongue over to the affected side. It is also due to the paralysis of this muscle that the tongue loses its tonus, and its base therefore appears higher on the affected than on the normal side. In opposition to this view, Erb maintains that under normal conditions the lateral movements of the tongue are performed by the intrinsic muscles (longitudinalis and transversus) of the other side, and that in pathological conditions the action of these muscles is not counterbalanced by their opponents. Against this theory stands the fact that in the present case, as in several other cases, the deviated protruded tongue could be made straight by the application of the faradaic current to the opposite side; that, furthermore, the tongue could be moved perfectly well in all directions within the mouth, but that it could not be brought beyond the middle line while it was protruded. However, this question seems not to be definitely settled yet, as Remak, for instance, reports a case of hemiatrophy of the tongue with deviation to the affected side without paralysis of the genioglossus. There are also several cases reported in which in unilateral affections of the hypoglossus the tongue did not deviate at all, but remained straight when protruded. However, in these cases there was either a nuclear disease (Westphal) or only a partial atrophy (Remak (92)). So far as I know, there is not one case of complete unilateral peripheral paralysis of the hypoglossus on record without deviation of the tongue.

The sensation of the tongue was perfectly normal with regard to touch, pain, and temperature, as well as to taste. This is in accordance with all other observations of hypoglossal disease, so that Levin's theory that the hypoglossus contains sensory fibres may be definitely considered as disproved. A case described in a recent publication by Mingazzini, in which hemiatrophy of the tongue, caused by a cut into the throat, was associated with analgesia and hyperæsthesia, can not be adduced in support of Levin's theory, as this was probably a case of general paresis, and these sensory symptoms therefore were most likely due to complications, especially as the disturbance of sensation was not confined to the corresponding half of the tongue, but affected the entire organ.

In a few cases of unilateral hypoglossal disease the infrahyoid muscles have been also affected (Remak and Traumann). The muscles sternohyoid, sternothyreoid, and omohyoid are supplied by branches from a loop of communication between the descendens hypoglossi and the roots of the second and third cervical nerves. Only the thyreohyoid is supplied directly by the hypoglossus. Physiological experiments, as well as pathological observation, put it beyond doubt that the nerve fibres which supply this group of muscles originate from the cervical roots and not from the hypoglossus. In cases of hypoglossal disease where these muscles have been affected there was associated some injury of the roots of the second and third cervical nerve. In all cases in which an injury of the hypoglossus was not complicated in this way, these muscles were, as also in the present case, perfectly normal. Therefore an affection of these muscles can not be utilized in localizing the lesion above (Remak) or below (Bernhardt) the point where the descendens is given off.

The change of the electrical reaction is in proportion to the intensity of the lesion of the nerve—total absence of reaction, as in my case, indicating complete paralysis of the nerve. Very remarkable in this respect is a case by Möbius, in which the faradaic reaction of the affected side of a hemiatrophied tongue was increased.

The remaining symptoms in my case are: Paresis of the left velum palati, paralysis of the left vocal cord, tachycardia, and vomiting. The question of the innervation of the velum palati is by no means definitely settled. The trigeminus, facialis, glossopharyngeus, vagus, and accessorius are all alleged to possess motor fibres for the palate. It would be out of place to discuss here the various views regarding this subject. In this case an affection of the first three of these nerves can be excluded, as there are no other symptoms which would indicate such a lesion. The vagus, immediately after its passage through the jugular foramen, receives the fibres of the internal branch of the accessorius into its trunk and then enlarges to form the ganglion cervicale vagi (ganglion of the trunk, plexus nodosus), which is fifteen millimetres long and four to five millimetres thick. This ganglion is in close relation to the superior cervical ganglion of the sympathetic and is crossed by the hypoglossal nerve. It was, no doubt, this locality that was injured in my case, and the position of the bullet in the skiagraph corresponds to this region. The branches of the vagus and accessorius which supply the velum palati pass off from this ganglion. The superior pharyngeal nerve originates at the beginning of the ganglion. It is believed to contain mostly fibres from the accessorius. The inferior pharyngeal nerve, which contains vagus fibres, comes from the middle of the ganglion and communicates by several small fibres with the laryngeus superior, this latter nerve leaving the trunk at the lower border of the ganglion. As was mentioned in the history of the case, sensation in the larynx was perfectly normal, and we must therefore exclude an affection of the superior laryngeal nerve. It seems somewhat difficult to understand why this nerve should have remained intact, while branches above (pharyngeal) and below (recurrent, cardiac plexus) were affected. This could be explained either by the assumption that the irregularly shaped bullet saved the fibres of the laryngeus superior, pressing perhaps only on the posterior portion of the ganglion, or, what I think is more likely, that the lesion of the vagus took place immediately below the departure of the superior laryngeal nerve, and that the affection of the velum palati was not due to injury of the trunk of the vagus, but rather to a direct lesion of the pharyngeal plexus. This plexus, which is formed by the vagus, the accessorius, glossopharyngeus, and sympatheticus, is situated on the external surface of the constrictor medius at the lateral wall of the pharynx. It is about here that the bullet must have traversed the pharyngeal wall, and on its way might have injured the plexus. In favor of this view is the fact that the paresis of the velum palati is the only symptom which has improved since I have had the patient under observation.

Cases of total paralysis of one vocal cord, caused by injury of the cervical trunk of the vagus, have been described repeatedly. With regard to the question whether the innervation of the vocal cords takes place through the vagus or the accessorius my case, of course, is of no value, as the lesion occurred below the point of union. However, in spite of the older views of Bischoff, Schiff, Heidenheim, *et al.*, that the muscles of the larynx are innervated by the accessorius, the latest investigations of Navratil and Grabower seem to put it beyond doubt that the nerves of the larynx are derived from the vagus.

In many cases of injury of the vagus the heart's action has not been affected at all. Deibel found in fourteen cases of cervical vagotomy the function of the heart unimpaired. Similar results have been obtained by Weidner. In cases of this kind probably the vagus of the other side acted vicariously. Some observers, on the other hand, found the heart's action considerably accelerated after injury to the vagus of one side. Traumann's patient had a pulse of 90 to 130 a minute for several weeks. However, this tachycardia lasted in all these cases only a comparatively short time; after several weeks the heart's action is said to have become normal again. The persistence of the rapid pulse (106 a minute) for so long a period as in my case (already six months) is, it would appear, an unusual phenomenon. This is the more remarkable, as it is the left vagus which was affected, and it is maintained (Arloing and Tripier, Eichhorst) that the vagus of the right side possesses a higher degree of inhibitory power upon the heart than the vagus of the left. Furthermore, the stomach symptoms also were much more marked in my patient than is usual in cases of this kind. Most observers mention only nausea with occasional vomiting for a short time after the injury. In Traumann's case there were nausea and vomiting for only a few days, while in my case the vomiting after each meal persisted for a period of several months.

The various considerations which I have attempted to develop in this paper may prove, I trust, of sufficient interest from a neuropathological point of view to warrant its publication.

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53 EAST SIXTIETH STREET.

A CASE OF SUBGLOTTIC FIBROMA:

REMOVAL BY TRACHEOTOMY AND CURETTING.*

BY JOHN W. FARLOW, M. D.,

BOSTON.

MRS. P., thirty-seven years of age, married, consulted me in January, 1897, for difficulty in breathing. About four years previous she had noticed that her respiration was impeded and that the nasal passages were getting smaller. This led her to think that the nasal obstruction might be the real, underlying cause of her trouble, and about a year later—that is, three years ago—she consulted Dr. H. W. Loeb, of St. Louis. He found considerable cartilaginous projections on each side of the nasal sæptum, which he removed in part, affording her relief from mouth breathing. On examining the larynx he found what he was disposed to think were two subglottic growths, one on each side, somewhat as represented in Fig. 1.

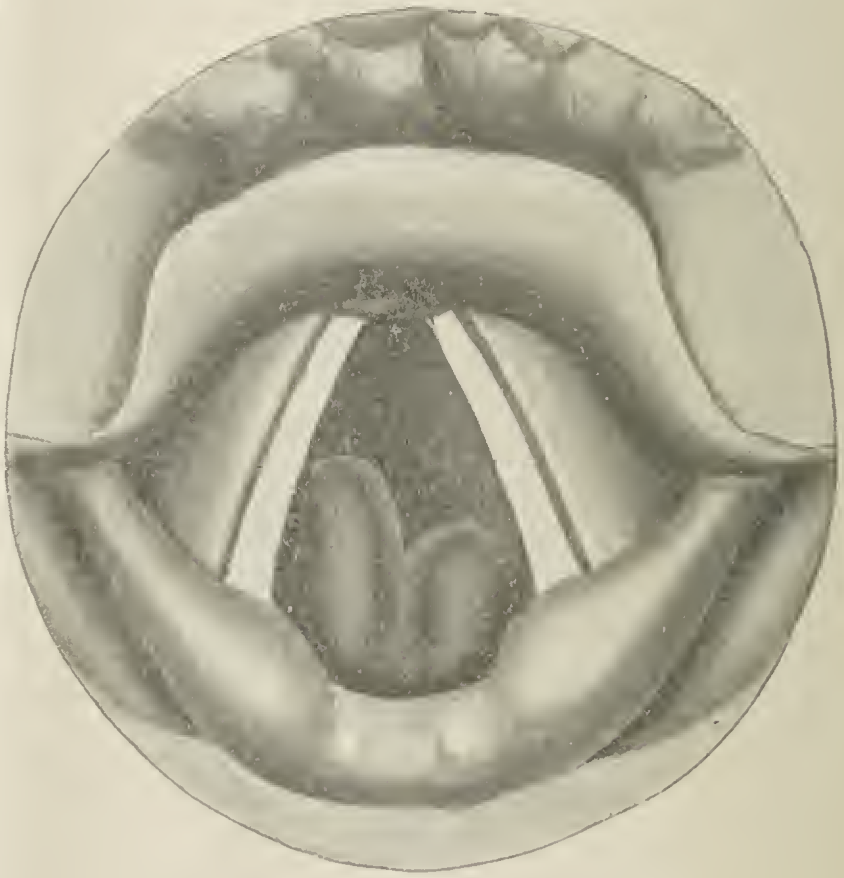

FIG. 1.

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* Read before the American Laryngological Association at its nineteenth annual congress.

Dr. Bernays, of St. Louis, saw her then in consultation, and was led to operate by the most distressing symptoms of dyspnœa. The trachea was laid open for about an inch and a quarter, and upon its posterior wall—that is, upon the sæptum separating the trachea from the œsophagus, extending up to the cricoid cartilage—he found a tumor an inch and a half in length and three eighths of an inch broad, about the thickness of a lead pencil, brown in color, of a soft texture, making the mucosa of the posterior wall of the trachea bulge into the lumen, and seemingly also causing a similar projection into the œsophagus. He could not bring himself up to the point of attempting the extirpation, because the growth could not, as he thought, be removed without making a permanent tracheo-œsophageal fistula, a very unmanageable affair, because it is almost impossible to prevent food or liquids from getting into the air-passages.

Dr. Bernays and Dr. Loeb were of the opinion that the growth was not malignant at that time. They considered the case a very interesting as well as a very curious one. "After the tracheal operation the dyspnœa was greatly relieved, and for some time she remained comparatively free from great disturbance in breathing."

There was no history of syphilis, and antisyphilitic remedies in large doses had no beneficial effect.

The improvement in her condition was only temporary and she grew gradually worse, at times feeling almost suffocated, especially at night and when she took cold, and again having periods of some relief. When I saw her the dyspnœa was very marked and there was much wheezing. Talking was interrupted by the necessity of taking a longer breath after every few words. She was very thin and had lost some thirty pounds, weighing only about ninety pounds at that time. There was no pain of any kind, and no difficulty in swallowing. The nose seemed to be of but little service in respiration, but the intense dyspnœa would have required mouth breathing, even if the nose had been sufficiently free.

The nasal bones, especially at their lower ends, were much thickened, as were also the lateral cartilages. The anterior part of the sæptum was much increased in thickness on both sides, so that the entrance of the nostrils was much narrowed and but a small current of air passed through.

There was nothing abnormal in the mouth, fauces, postnasal space, epiglottis, or larynx. The voice was not hoarse, and there was nothing unusual felt in the neck externally.

Below the freely moving white cords the lumen of the trachea was almost completely filled by smooth, regular, rounded swellings, two on the right and one on the left, seemingly arising from the posterior part of the trachea, and leaving only a narrow chink anteriorly for the air (Fig. 2). I was not able to touch the mass with a probe, because the air space left was so small that the probe was enough to shut off what little air she had. The facts that the cords moved so freely and that her voice was clear seemed conclusive that the growth did not involve the cricoid. From the appearance of the cartilages of the nose, from the situation of the tumor near the tracheal cartilage, from the long continuance of the disease, from the smooth, rounded, non-ulcerative mass, and from the freedom of the larynx, absence of pain, and difficulty in swallowing, I was inclined to consider it a case of enchondroma of the posterior wall of the upper part of the trachea. She was losing ground and was in great need of air, and tracheotomy might have to be done at any moment.

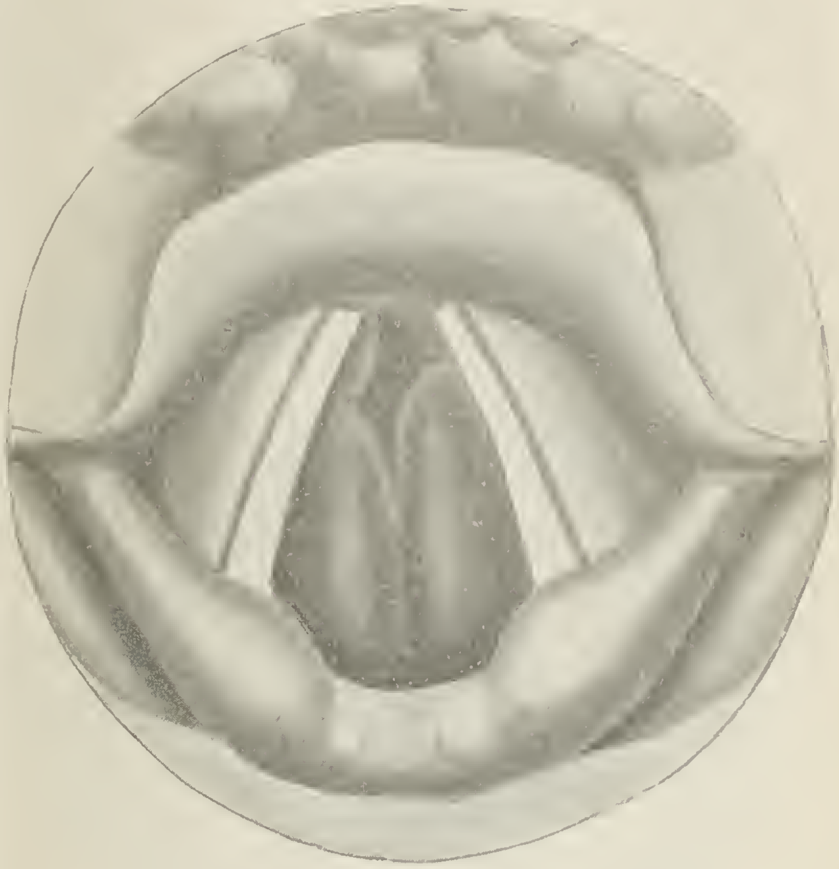

Fig. 2.

I asked Dr. M. H. Richardson to see the case with me. He thought it probably an enchondroma, but at any rate non-malignant, and that tracheotomy should be done, and, if possible, enough of the growth removed to free the lumen of the trachea. An endolaryngeal operation was impossible.

On February 9, 1897, Dr. Richardson did a low tracheotomy under cocaine anæsthesia, and inserted a tube. Chloroform was then administered through the tube, but the patient's condition became so bad that ether was substituted, and there was no further trouble with the anæsthesia. The trachea was then opened above the tube nearly to the cricoid cartilage, gauze was packed around the tube to prevent the blood from getting into the trachea, and the edges of the wound were held apart by the fingers or retractors.

The growth was seen to begin below the cricoid cartilage, and to extend down on the posterior tracheal wall an inch and a half or more. It was one mass and not several. One finger passed through the mouth into the larynx, and the other through the tracheal wound, felt a large, firm mass between them, extending backward toward the œsophagus as well as into the trachea. The problem seemed to be to remove what had caused the dyspnœa, without attempting the extirpation of the whole mass.

With the sharp curette, the firm, dense tissue was gradually removed, with but little hæmorrhage, and the finger could then be passed from below, right through, over the now smooth tracheal wall, up between the vocal cords. I passed one finger into the larynx from above, and the other from below, and it seemed to me that the trachea was practically free from any encroachment on its calibre.

The skin was drawn tight over the trachea and sutured, but the tracheal rings were not sutured. The tube was left in, and a small piece of gauze just above it. At the end of five days the tube was removed, and the skin wound above had healed by first intention. The opening for the tube was soon closed over by granulation. I examined the larynx on February 19th, ten days after the operation, and found the left cord rather red, but both cords moving well. The trachea was quite free, except a little irregular tissue seen under the posterior end of each cord in deep inspiration (Fig. 3).

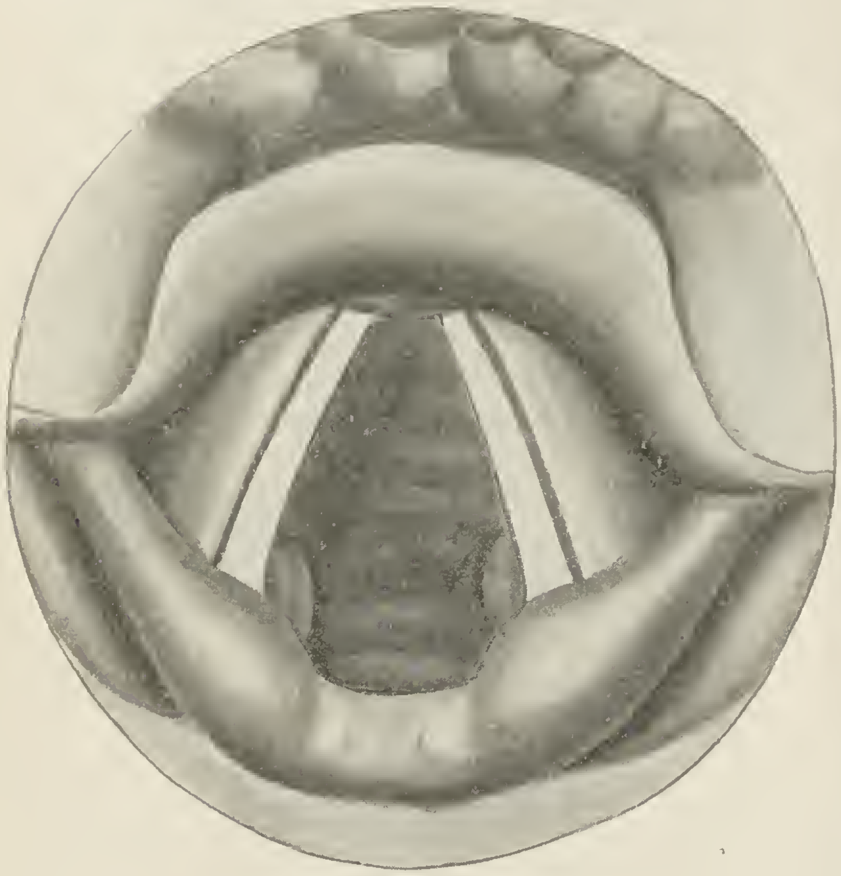

Fig. 3.

A letter received from her a month later says that she is much better and is gaining in flesh. The voice is much better than when I last saw her. If she has a little cold she is somewhat hoarse and there is some mucus, but when this is expectorated the huskiness disappears and the breathing is all right.

Examination of the tissue removed by the curette showed it to be a fibroma.

According to Schrötter (*Krankheiten der Luftröhre*, 1896, p. 147), fibromata of the trachea are found as sessile growths, in the shape of polypi, or as papillomata, their usual situation is in the upper part of the trachea and on the posterior wall, and the polypoid form is the most frequent. The papillomatous form is more likely to occur in connection with the same condition in the larynx. Enchondromata seem to be very rare, as Schrötter speaks of only two cases on record.

THE INSPECTION OF THE ŒSOPHAGUS AND THE CARDIA.[*]

By MAX EINHORN, M. D.

It is well known that the problem of inspecting the œsophagus has been worked at for quite a number of years. The first attempts in this direction were made by Störk,[*] who introduced some kind of a speculum into the œsophagus and tried to obtain a view of it by means of a laryngeal mirror. Similar attempts had been made by Waldenburg,[†] and later also by Mackenzie.[‡] This method, however, proved to be inadequate, as it is only possible to see a little spot, but not a larger area.

In 1881 Mikulicz[#] first succeeded in inserting a straight tube into the œsophagus, and was able to look directly into it by means of reflected light. This instrument which Mikulicz designed has since undergone but slight and unessential modifications; thus the original method still prevails.

Besides Mikulicz, von Hacker,[‖] of Vienna, has done a great deal of work in œsophagoscopy, and I may say that this investigator deserves almost as much credit as Mikulicz himself. Von Hacker was the first who examined a great number of patients with the œsophagoscope. The valuable papers of this writer were published in the *Wiener klinische Wochenschrift* of 1889, 1894 and 1896. Later on, Theodor Rosenheim[△] also took up the subject of œsophagoscopy and modified Mikulicz's instrument in such a manner that the obturator ended in a blind piece of rubber tubing two inches in length (see Fig. 1, A). The end of the œsophagoscope is in this way flexible and can, according to Rosenheim, be much more easily inserted. I do not think that the rubber end of the obturator is of importance; it also has the disadvantage that a thorough cleansing or disinfection of the instrument is thereby made materially more difficult. For this reason I have constructed the obturator in such a way that it can serve as a cotton holder by means of a screw arrangement. The end of the obturator being wrapped with cotton and the screw tightened, it is inserted into the œsophagoscope, the lower opening of which is then neatly closed by the cotton (Fig. 1, G). Each time the instrument is used a fresh piece of cotton is wrapped around it.

In regard to the modifications of the œsophagoscope, various investigators have tried to construct a metallic tube which would be flexible while it was inserted into the œsophagus, but which could be straightened afterward by some arrangement. The advantage of such an apparatus would consist in its being more easily inserted. I myself have also worked considerably in this line, and have made several attempts during the past year to construct a suitable apparatus.

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[*] Read before the German Medical Society of the City of New York, October 4, 1897.

[*] Störk. Die Untersuchung des Oesophagus mit dem Kehlkopfspiegel. *Wiener med. Wochenschrift*, 1881, No. 8.

[†] L. Waldenburg. *Berl. klin. Wochenschrift*, 1870, No. 48, p. 578.

[‡] Sir Morell Mackenzie. *Diseases of the Throat and Nose*, vol. ii, 1884, p. 31.

[#] Mikulicz. Ueber Gastroskopie und Oesophagoskopie. *Wiener med. Presse*, 1881, Nos. 45, 46, 47, 48, 49, 50, 52.

[‖] Von Hacker. *Wiener klin. Wochenschrift*, 1889, No. 23, p. 469; 1894, Nos. 49 and 50; 1896, Nos. 6 and 7.

[△] Th. Rosenheim. *Deutsche med. Wochenschrift*, 1895, No. 50; *Berl. klin. Wochenschrift*, 1896, Nos. 13, 14, 15.

J. Reynders & Co. have made, under my direction, several flexible œsophagoscopes which can be straightened after they are inserted. I must state, however, that they are not so serviceable as the ordinary stiff œsophagoscope, as the straightening is frequently not perfect. One is a spiral instrument which becomes straight on the insertion of a stiff obturator (Fig. 1), D and E); there is another which by means of wires and a screw arrangement can be made flexible or stiff at will.

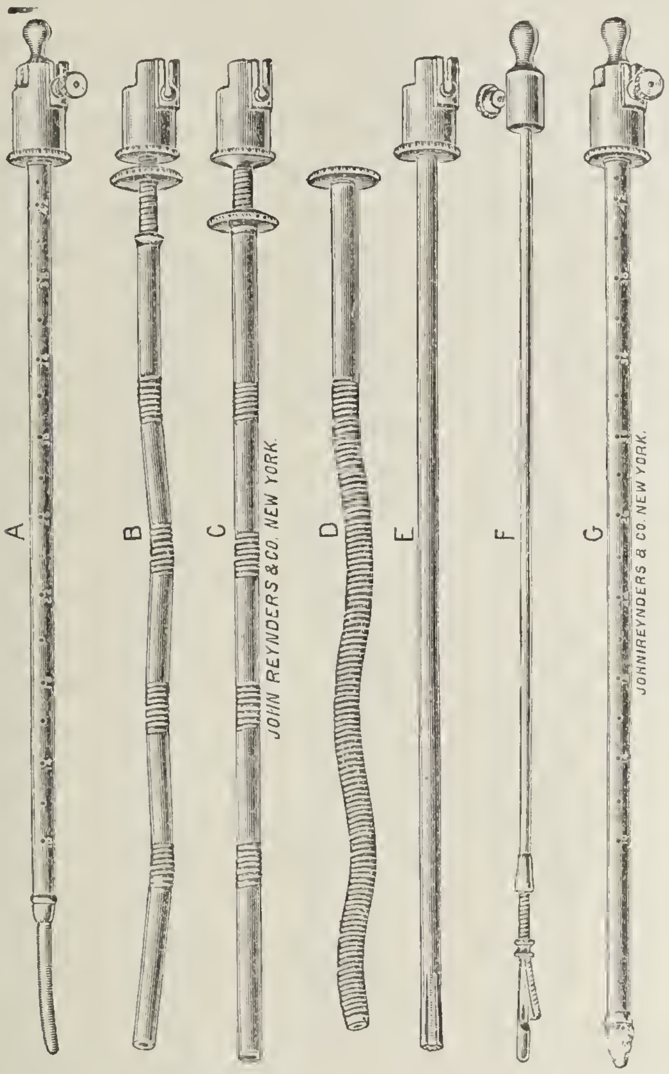

Fig. 1.—Mikulicz's œsophagoscope. A, Rosenheim's modification, the end made of rubber; B, C, and D, E, flexible œsophagoscope; C, the flexible œsophagoscope made stiff by means of the screw; F, the obturator serving as a cotton holder; G, the œsophagoscope, with the obturator F, occluding the opening.

Kelling,* to whom, next to Rosenheim, much credit is also due with regard to œsophagoscopy, has just devised a new segmented œsophagoscope which can be straightened. Probably Kelling's instrument will work better than the two instruments of mine constructed by Reynders.

I on my part have abandoned further attempts in this direction, as it is not in reality difficult to introduce a stiff tube into the œsophagus. Suppose the flexible tube is used, it must be stiffened before looking through it; if the œsophagus occupies such a position that a stiff tube can not be pushed down, even the flexible instrument can not then be straightened without eventually causing some lesion. On this account I do not deem all these modifications essential, and believe that we can efficiently make use of the original instrument of Mikulicz and von Hacker.

It has been suggested by Rosenheim and von Hacker to cocainize the pharynx if necessary—Kelling employs even chloroform-ether narcosis in many cases—and to examine the patient in a recumbent posture. In my opinion this posture does not much facilitate the procedure. I usually examine the patient with the œsophagoscope in a sitting posture, the head reclining considerably backward. (See accompanying photograph, Fig. 2, for which I am indebted to Dr. Carl Goldmark.)

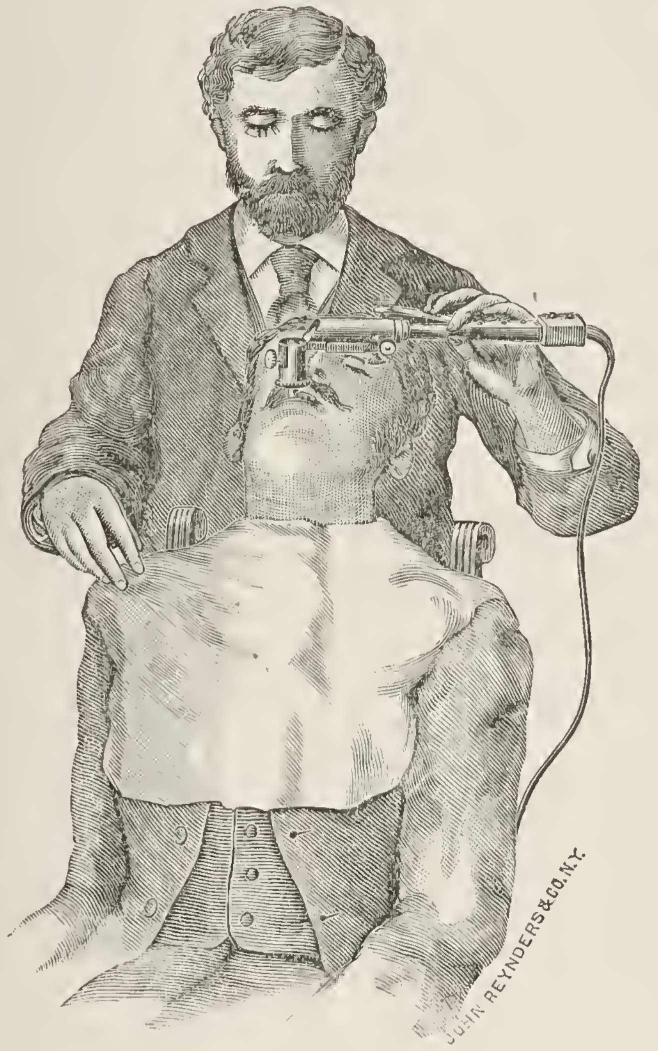
JOHN REYNDERS & CO. N.Y.

Fig. 2.—Photograph of a patient during examination with the œsophagoscope, showing the instrument in position. The panelectroscope having been attached to the œsophagoscope, the physician is enabled to inspect the gullet. During the withdrawal of the œsophagoscope the entire œsophagus can be viewed.

In exceptional instances chloroform-ether narcosis will be necessary. In most cases even the cocainization of the pharynx will not be essential; I, at least, have been able to do without it. [The author then demonstrated on two patients the examination with the œsophagoscope.] I do not find œsophagoscopy difficult of execution. In almost all cases in which I have attempted to introduce the œsophagoscope I have succeeded. It is self-evident, however, that we may meet now and again with patients who are unwilling to submit to an œsophagoscopical examination.

With regard to the value of œsophagoscopy, I must say that it is diagnostically and therapeutically of great importance.

Notwithstanding my meagre experience in this field, I have already met with cases in which the diagnosis of a neoplasm could be more easily made with the œsophagoscope. Thus, I have recently examined a patient with dysphagia in whom the œsophagoscope revealed several spots at the cardia which were dark red and intermingled with white tissue. This at once gave the impression of being foreign, of a tissue that ought not to be there. Normally the cardia appears somewhat reddish, while the œsophagus presents a whitish-gray hue. In another case in which there was likewise the suspicion of a cancer of the cardia, the latter did not show anything abnormal. Instead of my seeing, however, above the cardia the œsophageal wall, there appeared here suddenly an empty space. This seemed to point to a dilatation of the œsophagus without a stricture. This diagnosis could also have been arrived at from a study of other symptoms. At any rate a cancer of the cardia could be positively excluded by the œsophagoscopical examination.

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* Georg Kelling. Boas's *Archiv f. Verdauungskrank.*, Bd. ii, pp. 321 and 490; *München. med. Wochenschrift*, 1897, No. 34.

I fully coincide with the following remarks of von Hacker with regard to œsophagoscopy:

"The experience at hand with regard to the utilization of œsophagoscopy may still be expanded and the method improved. By means of œsophagoscopy, our knowledge of the appearance and the physiological condition of the inner coat of the œsophagus, which until recently was invisible to the eye, has been enlarged, and our views on the morbid conditions of this organ and their course have been materially advanced. . . .

"It is certain that the œsophagoscope is already of aid in the early recognition or exclusion of cancer of the œsophagus or of the cardia of the stomach. It aids us also in discovering foreign bodies in the healthy as well as the diseased gullet and in quickly and delicately removing such bodies without a bloody operation. Thus, it is diagnostically and therapeutically of the highest importance."

In conclusion, let me emphasize the statement that œsophagoscopy will undoubtedly prove of great value in diagnosis as well as therapeusis, and I firmly believe that this method will become popular. It may, perhaps, still take some time, but there is no doubt that the œsophagoscope will have a lasting place in medicine.

20 East Sixty-third Street.

A NEW METHOD
FOR THE RELIEF OF CERTAIN ENLARGEMENTS OF THE TURBINATED BODIES.*

By D. BRYSON DELAVAN, M. D.

True hypertrophy of the turbinated tissues is a condition for the relief of which it is considered necessary to remove bodily an amount of the affected soft parts sufficient to overcome the occlusion of which they are the cause. For this purpose we use the snare, or resort to the application of caustics or of the galvanocautery. In all such operative work more or less of the mucous membrane is destroyed and, as often happens, without the desired effect upon the deeper tissues having been accomplished.

In some cases of a subacute or chronic nature in which the turbinated bodies have become abnormally enlarged the swelling is due not to a general hypertrophy but simply to an unnatural engorgement of the plexus of blood-vessels or "turbinated corpora cavernosa" which underlies the nasal mucous membrane. This condition is common in various vasomotor disturbances of the nasal circulation which are not infrequently met with. Their results are often distressing to the patient, as, for instance, in hay fever and in some of the forms of chronic coryza, producing general as well as local irritation far out of proportion to the apparent seriousness of the cause. In the treatment of these cases the first thing to be done is to so reduce the volume of the congested bodies that the patient can breathe through his nose, and that the symptoms due to contact of the turbinated bodies with the sæptum can be relieved. In many instances, let it be understood, the nasal congestion is due to general causes, and should therefore be treated with reference to them and by general means. In a few cases, however, it seems necessary to resort to local means competent to overcome the troublesome swelling. For the attainment of this end, the use of the cautery is irritating, destructive to the mucous membrane, and often unsuccessful. The desired end, if accomplished at all, is only attained at the expense of much unnecessary injury to the useful and important superficial parts, while the congested turbinated vessels, which are the real seat of the difficulty, remain as turgid as ever.

Some time ago it occurred to the writer to abandon in these cases the use of superficial destructive agents and to endeavor to relieve the condition by a method of subcutaneous incision, the idea being to divide a certain number of the blood-vessels, permanently obliterating them, and thus lessening the volume of the whole mass. For this purpose a lance-pointed needle or one of the minute knives used in some departments of ophthalmic surgery should be employed.

In performing this little operation the site of the proposed puncture or punctures should first be determined, and this should be done while the parts are in a condition of maximum turgidity. Cocaine having been applied, a spot anterior to the proposed incision should be selected and the point of the needle should be introduced obliquely through the mucous membrane, carried backward beneath the membrane as far as necessary and parallel with its surface, and with a slight sweep, the extent of which should depend upon the amount of hypertrophy present, should be brought out again through the original opening. The external wound—namely, that through the mucous membrane—should be as small as it is possible to make it, a width of one thirty-second of an inch being amply sufficient.

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* Read before the American Laryngological Association at its nineteenth annual congress.

The intention of the operation is not necessarily to destroy a large number of vessels, but only as many as may be required to sufficiently reduce the swelling. It is much better to repeat the performance at a subsequent sitting than to overdo it. Two punctures are as many as should be attempted at any one time. In withdrawing the knife care should be taken not to enlarge the opening through the mucous membrane. The procedure causes little pain, and that of a transient character. Bleeding is also slight and easily checked by the application to the site of the puncture of some good astringent, although it is better to encourage a slight flow than to stop it immediately. Healing takes place promptly, and thus far in the experience of the writer without accident. Where the turgescence is excessive it is possible to secure a more pronounced effect from the operation by reapplying the cocaine and packing the parts with cotton so that returgescence can not take place for a few hours.

This method is offered as a possible substitute for the measures heretofore employed in the treatment of the particular condition mentioned. Its advantages are:

1. Ease of application.
2. Freedom from irritating effects.
3. The absolute preservation in its normal condition of the mucous membrane.
4. Practical adaptability to the end desired.

The immediate results of the operation are beneficial, in that the congestion of the enlarged portion of the turbinated is relieved and the obstruction to nasal respiration is thereby removed. In many cases this relief is permanent. Should the symptoms of congestion return at some future time, however, the cessation of the difficulty for over a somewhat limited period will compensate for the slight inconvenience of the operation. Whether or not the subjecting of the turbinated bodies to such treatment will result in ultimate harm remains to be seen. It does not seem probable that its careful and conservative application in suitable cases could prove injurious.

SOME EXPERIMENTAL INVESTIGATIONS AS TO THE EFFECTS OF THE ADMINISTRATION OF YEAST NUCLEIN UPON THE LEUCOCYTES.

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(*Continued from page 767.*)

Case IV.—Miss M. The patient was twenty years of age, slight frame, anæmic and emaciated. She was under treatment in the surgical clinic for bone tuberculosis, and was referred for nuclein treatment. Hæmoglobin, 50; red corpuscles, 2,500,000. There was a constant leucocytosis of 18,000 to 25,000.

Four cubic centimetres of the nuclein solution were injected daily for five weeks. There was never any reaction, and the daily range of the leucocyte count was not materially affected.

Case V.—Mrs. C. This patient, thirty-five years of age, had extensive tuberculous infiltration in both upper lobes. Her hæmoglobin was 85, red blood-corpuscles were 4,000,000, and the daily average of leucocytes was 7,500. Four cubic centimetres of the nuclein solution were injected daily for six weeks. There was never any reaction, and the daily average of leucocytes was practically unchanged. The patient declined rapidly during the treatment.

Case VI.—Mr. J., a farm boy, eighteen years of age, had tuberculosis in upper right lobe. The patient was in good condition. Hæmoglobin, 100; red blood-corpuscles, 5,000,000; leucocytes, 8,000 to 10,000. Four cubic centimetres of the nuclein solution were injected daily for two months. The patient did not remain in the hospital during this period, so that temperature observations could not be taken, but he had no symptoms of the usual reaction, and his leucocytes, taken at frequent intervals, showed no disturbance. The patient made distinct improvement while under this treatment, but was lost sight of later. (Is now working, and said to be entirely free from symptoms.—Dr. Dock.)

Case VII.—Mr. S., referred from surgical clinic for nuclein treatment because of bone tuberculosis. The patient's age was forty; he was much emaciated and weak. Hæmoglobin, 70; red blood-corpuscles, 4,000,000; leucocytes, 7,000 to 8,000. Four cubic centimetres of the nuclein solution were injected daily for one month. There was never any reaction, and the leucocyte count was practically unchanged.

Case VIII.—Mr. R., aged forty, referred from surgical clinic for nuclein treatment because of tuberculosis of the genito-urinary tract. The patient was in good condition; hæmoglobin, 100; red blood-corpuscles, 4,500,000. The daily average of leucocytes was 7,500. Four cubic centimetres of the nuclein solution were injected for two months. There was never any reaction, and the leucocyte count was unchanged. The patient improved under the treatment.

Case IX.—Miss D., twenty-six years of age, had tuberculosis of cervical glands. These were removed by Dr. Nancrede, and the patient was referred for treatment with nuclein. The patient was in fair condition. Hæmoglobin, 90; red blood-corpuscles, 4,500,000; the leucocytes ranged from 6,000 to 10,000. Five cubic centimetres of the nuclein solution were injected daily from February 5th to March 3d. There was never any reaction, and the leucocyte range remained exactly as before, the lowest daily count being 6,000, and the highest, one hour after meals, being 10,000. The patient gained rapidly during this month.

Case X.—Mr. S., laborer, aged forty-five, had extensive tuberculosis on both sides, with large cavity in upper right. He was very weak, much emaciated, and had daily temperature of 100° to 104° F. He had also daily chill, sweat, and profuse purulent expectoration. Nevertheless there was no leucocytosis, the daily count ranging from 6,000 to 9,000. His hæmoglobin was 70; red blood-corpuscles, 4,000,000. Five cubic centimetres of the nuclein solution were injected daily from February 15th to March 6th. His daily symptoms remained unchanged, and the highest count of leucocytes during this time was 9,878. The patient failed quickly, was sent home, and died soon after.

Case XI.—Mr. A., pulmonary tuberculosis. The patient was in fair condition. Hæmoglobin, 90; red blood-corpuscles, 4,500,000. He had daily range of leucocytes from 10,000 to 20,000. His temperature ran from 100° to 101° F. For three days previous to the beginning of the injections the daily average of leucocytes was 15,000. Five cubic centimetres of the nuclein solution were injected daily for six weeks. There was never any reaction that could be distinguished from the symptoms which he had had before the injections were begun. There was no increase of leucocytosis, the daily average varying but slightly from 15,000 to 16,000. The patient made no improvement during the period of the injections.

Case XII.—Mr. A., a farmer, twenty-six years of age, had been under treatment in the clinic of dermatology for chronic furunculosis. He had also intermittent hæmaturia. His general condition was fair. Hæmoglobin, 90; red blood-corpuscles, 4,500,000. There was a constant leucocytosis of 10,000 to 18,000, the daily average varying from 13,000 to 15,000. Six counts were made daily.

December 21, 1894.—No injection. Average, 13,271.

22d.—No injection. Average, 14,975.

23d.—No injection. Average, 13,493.

24th.—Nuclein, five cubic centimetres. Average, 17,031.

The patient had a slight reaction during the afternoon, when the leucocytes reached 19,000.

25th.—Nuclein, five cubic centimetres. Average, 12,341. No reaction.

26th.—Nuclein, five cubic centimetres. Average, 15,619. Slight reaction.

27th.—Nuclein, five cubic centimetres. Average, 17,190. Slight reaction.

28th.—Nuclein, five cubic centimetres. Average, 12,081. No reaction.

29th.—Nuclein, five cubic centimetres. Average, 12,187. No reaction.

30th.—Nuclein, five cubic centimetres. Average, 14,219. No reaction.

31st.—Nuclein, five cubic centimetres. Average, 11,407. No reaction.

January 1, 1895.—Nuclein, five cubic centimetres. Average, 12,000. No reaction.

2d.—Nuclein, five cubic centimetres. Average, 11,719. No reaction.

3d.—Nuclein, five cubic centimetres. Average, 12,960. No reaction.

4th.—Nuclein, five cubic centimetres. Average, 11,000. No reaction.

5th.—Nuclein, five cubic centimetres. Average, 12,000. No reaction.

The injections were then stopped and the leucocytes counted for a week. The average remained at 11,000 to 12,000. The reaction on the 24th, 26th, and 27th was slight, but the point of injection in the gluteals was much reddened, indurated, and painful.

Case XIII.—Mr. B., farmer, aged twenty-seven, sexual neurasthenic; of good nutrition. Hæmoglobin, 100; red blood-corpuscles, 5,000,000. The leucocyte count varied from six to eleven thousand.

January 23, 1895.—9.30 A. M., leucocytes, 9,375. 11.15 A. M., leucocytes, 9,375. 1.30 P. M., leucocytes, 10,000. 5 P. M., leucocytes, 11,750.

24th.—9.30 A. M., leucocytes, 8,750. 11 A. M., leucocytes, 9,750. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 10,250.

25th.—9.30 A. M., leucocytes, 8,750. Five cubic centimetres of a 0.26-per-cent. KOH solution injected after this count. 11.30 A. M., leucocytes, 10,000. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 9,750. No reaction.

26th.—9.30 A. M., leucocytes, 8,750. Five cubic centimetres of the KOH solution injected after this count. 11.30 A. M., leucocytes, 11,000. 1.30 P. M., leucocytes, 9,000. 5.30 P. M., leucocytes, 10,000. No reaction.

27th.—9.30 A. M., leucocytes, 8,750. Five cubic centimetres of the KOH solution injected after this count. 11 A. M., leucocytes, 9,000. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 10,000. No reaction.

28th.—8.30 A. M., leucocytes, 8,000. Five cubic centimetres of the KOH solution injected after this count. 11.30 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 10,000. No reaction.

29th.—8.30 A. M., leucocytes, 6,750. Five cubic centimetres of KOH. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 10,000. No reaction.

30th.—8.30 A. M., leucocytes, 8,750. Five cubic centimetres KOH. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 8,750. No reaction.

31st.—8.30 A. M., leucocytes, 8,750. Five cubic centimetres KOH. 11.30 A. M., leucocytes, 10,000. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 8,750. No reaction.

February 1st.—8.30 A. M., leucocytes, 8,750. Five cubic centimetres KOH. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 7,500. No reaction.

2d.—8.30 A. M., leucocytes, 6,750. Five cubic centimetres KOH. 11 A. M., leucocytes, 7,500. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 8,750. No reaction.

3d.—8.30 A. M., leucocytes, 10,000. Five cubic centimetres KOH. 10 A. M., temperature, 100.8° F.; leucocytes, 12,500. Slight reaction. 1.30 P. M., temperature, 99.6°; leucocytes, 10,000. 5.30 P. M., temperature, 99.6°; leucocytes, 10,000.

4th.—8.30 A. M., leucocytes, 6,785. Five cubic centimetres KOH. 11.30 A. M., leucocytes, 7,850. 1.30 P. M., leucocytes, 8,750. 5.30 P. M., leucocytes, 8,765. No reaction.

5th.—8.30 A. M., leucocytes, 8,000. Five cubic centimetres KOH. 11 A. M., leucocytes, 7,865. 1.30 P. M., leucocytes, 8,765. 5.30 P. M., leucocytes, 10,000. No reaction.

6th.—8.30 A. M., Leucocytes, 7,865. Five cubic centimetres KOH. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 10,750. 5.30 P. M., leucocytes, 9,876. No reaction.

7th.—8.30 A. M., leucocytes, 7,865. Five cubic centimetres KOH. 11.30 A. M., leucocytes, 8,765. 1.30 P. M., leucocytes, 10,000. 3 P. M., leucocytes, 9,876. No reaction.

8th.—8.30 A. M., leucocytes, 6,875. Five cubic centimetres KOH. 11 A. M., leucocytes, 7,865. 1.30 P. M., leucocytes, 10,000. 5 P. M., leucocytes, 9,875. No reaction.

9th.—9 A. M., leucocytes, 7,650. Five cubic centimetres KOH. 11.30 A. M., leucocytes, 7,865. 1.30

P. M., leucocytes, 11,000. 5.30 P. M., leucocytes, 9,750. No reaction.

10th.—8.30 A. M., leucocytes, 6,875. Five cubic centimetres KOH. 11 A. M., leucocytes, 7,500. 1.30 P. M., leucocytes, 10,000. 5 P. M., leucocytes, 8,986. No reaction.

11th.—8.30 A. M., leucocytes, 8,760. Five cubic centimetres KOH. 11 A. M., leucocytes, 7,500. 1.30 P. M., leucocytes, 10,765. 5.30 P. M., leucocytes, 8,968. No reaction.

12th.—8.30 A. M., leucocytes, 8,765. Five cubic centimetres KOH. 11.30 A. M., leucocytes, 7,863. 1.30 P. M., leucocytes, 11,635. 5.30 P. M., leucocytes, 10,000. No reaction.

13th.—8.30 A. M., leucocytes, 6,785. Five cubic centimetres nuclein solution. 11.30 A. M., leucocytes, 7,867. 1.30 P. M., leucocytes, 9,879. 5 P. M., leucocytes, 8,765. No reaction.

14th.—8.30 A. M., leucocytes, 8,750. Five cubic centimetres nuclein. 11.30 A. M., leucocytes, 9,876. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 8,750. No reaction.

15th.—8.30 A. M., leucocytes, 12,500. No reaction. Five cubic centimetres nuclein. 11.30 A. M., leucocytes, 8,765. 1.30 P. M., leucocytes, 9,879. 5.30 P. M., leucocytes, 8,750.

16th.—8.30 A. M., leucocytes, 8,576. Five cubic centimetres nuclein. 11 A. M., leucocytes, 8,750. 1.30 P. M., leucocytes, 11,000. 5.30 P. M., leucocytes, 8,750. No reaction.

17th.—8.30 A. M., leucocytes, 8,765. Five cubic centimetres nuclein. 11.30 A. M., leucocytes, 8,765. 1.30 P. M., leucocytes, 10,678. 5 P. M., leucocytes, 8,765. No reaction.

18th.—8.30 A. M., leucocytes, 8,768. Five cubic centimetres of nuclein. 11.30 A. M., leucocytes, 7,869. 1.30 P. M., leucocytes, 9,986. 5.30 P. M., leucocytes, 8,968. No reaction.

19th.—8.30 A. M., leucocytes, 7,850. Five cubic centimetres nuclein. 11 A. M., leucocytes, 8,768. 1.30 P. M., leucocytes, 10,000. 5.30 P. M., leucocytes, 9,896. No reaction.

The injection of five cubic centimetres of the nuclein solution was continued daily until March 6th. The blood counts were also kept up during this period. There was never any leucocytosis, the daily average running from 6,000 to 8,000. The patient had no symptoms whatever from the injections except on the one day noted. There was never any redness or swelling at place of injection. This patient also declared himself to be relieved of his sexual symptoms through the treatment, but the inference may be drawn that the benefit in these sexual cases came through suggestion.

Case XIV.—Mr. B., aged twenty-six, farmer, was under treatment for muscular rheumatism. He was well nourished. Hæmoglobin, 100; red blood-corpuscles, 5,000,000; leucocytes varied from 6,000 to 8,000. These were counted regularly for three days before beginning the injections. The count for the last of the days will serve, as it was almost exactly the same for the three days.

November 16, 1894.—8.30 A. M., temperature, 98.6° F.; leucocytes, 6,042. 11.30 A. M., temperature, 98.6°; leucocytes, 7,500. 1 P. M., temperature, 98.6°; leucocytes, 7,912. 3.30 P. M., temperature, 98.6°; leucocytes, 6,250. 5.30 P. M., temperature, 99°; leucocytes, 6,878.

November 17th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 5,000. 11.30 A. M., temperature, 98.6°; leucocytes, 5,312. Nuclein, twelve cubic centimetres. 11.45 A. M., temperature, 98.6°; leucocytes, 7,500. 12 noon, temperature, 98.6°; leucocytes, 8,750. Slight chill. 1.30 P. M., temperature, 100°; leucocytes, 5,000. 2.30 P. M., temperature, 100°; leucocytes, 6,875. Strong reaction. 3.30 P. M., temperature, 102.8°; leucocytes, 14,063. Felt better. 6 P. M., temperature, 101.7°; leucocytes, 13,437. The reaction was that observed in all of the cases in which it occurred. The point of injection was flushed, indurated, and painful. The patient complained of nausea, chilliness, pain in bones, and great weakness; these symptoms being compared by the patient to those of *grippe*.

November 18th.—10.30 A. M., temperature, 98.6° F.; leucocytes, 10,213. Felt well. Sixteen cubic centimetres of nuclein injected. 10.35 A. M., temperature, 98.6°; leucocytes, 7,708. 10.45 A. M., temperature, 98.6°; leucocytes, 4,750. 12 noon, temperature, 98.6°; leucocytes, 9,650. 1.30 P. M., temperature, 100.8°; leucocytes, 13,331. 2.30 P. M., temperature, 101.4°; leucocytes, 14,791. Reaction. 4 P. M., temperature, 102.6°; leucocytes, 14,700. Very ill. 5 P. M., temperature, 102.8°; leucocytes, 15,630. Felt better. The symptoms of the reaction were the same as on the preceding day. These symptoms will be covered by the term reaction hereafter.

November 19th.—8.30 A. M., temperature, 99.8° F.; leucocytes, 14,600. Sixteen cubic centimetres of nuclein injected. 8.45 A. M., temperature, 99.8°; leucocytes, 14,375. Felt ill. 10 A. M., temperature, 99.8°; leucocytes, 16,250. 11 A. M., temperature, 99.8°; leucocytes, 16,250. 1.30 P. M., temperature, 102.5°; leucocytes, 21,250. Strong reaction. 3 P. M., temperature, 102.6°; leucocytes, 19,000. 5 P. M., temperature, 102.6°; leucocytes, 19,000.

November 20th.—8.30 A. M., temperature, 100° F.; leucocytes, 13,853. 1.30 P. M., temperature, 100°; leucocytes, 10,700. 4 P. M., temperature, 100°; leucocytes, 10,630. The patient felt too ill to receive an injection. He felt quite well in the evening.

November 21st.—10.30 A. M., temperature, 98.6° F.; leucocytes, 8,751. Sixteen cubic centimetres of nuclein injected. 10.45 A. M., temperature, 98.6°; leucocytes, 8,750. 11.45 A. M., temperature, 98.6°; leucocytes, 9,032. 1.30 P. M., temperature, 100°; leucocytes, 13,125. 3.30 P. M., temperature, 100°; leucocytes, 15,312. Strong reaction. 5 P. M., temperature, 101°; leucocytes, 16,666. 7.30 P. M., temperature, 102°; leucocytes, 14,375.

November 22d.—8.30 A. M., temperature, 100° F.; leucocytes, 14,600. Ten cubic centimetres of nuclein injected. 9.15 A. M., temperature, 99.6°; leucocytes, 12,300. 10 A. M., temperature, 99.6°; leucocytes, 9,375. 11 A. M., temperature, 101.6°; leucocytes, 11,406. 2.30 P. M., temperature, 101.6°; leucocytes, 15,304. Reaction. 3.30 P. M., temperature, 101.6°; leucocytes, 13,750. 5.30 P. M., temperature, 101.2°; leucocytes, 15,562.

November 23d.—9 A. M., temperature, 99.6° F.; leucocytes, 15,000. Fifteen cubic centimetres of nuclein injected. 9.45 A. M., temperature, 99.6°; leucocytes, 10,413. 10 A. M., temperature, 99.6°; leucocytes, 10,000. 11.30 A. M., temperature, 99.6°; leucocytes, 14,375. 1.30 P. M., temperature, 101.6°; leucocytes, 20,206. Reaction. 3 P. M., temperature, 101.4°; leucocytes, 20,000. 5.30 P. M., temperature, 101.1°; leucocytes, 14,375.

November 24th.—9 A. M., temperature, 99.8° F.; leucocytes, 10,000. Fifteen cubic centimetres of nuclein injected. 10 A. M., temperature, 98.6°; leucocytes, 10,345. 11.30 A. M., temperature, 98.6°; leucocytes, 14,375. 1.30 P. M., temperature, 98.6°; leucocytes, 14,000. 3 P. M., temperature, 101.8°; leucocytes, 20,000. 5 P. M., temperature, 101.8°; leucocytes, 15,000.

During the next three days no nuclein was injected. All of the symptoms of the reaction had disappeared by the second day, and on the third day the leucocytes had returned to their former count as shown by the count on the 27th, when the lowest count was 6,800 and the highest was 8,000.

November 28th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 8,000. Sixteen cubic centimetres of a 0.26 KOH and 0.6-per-cent. solution NaCl injected. 9 A. M., temperature, 98.6°; leucocytes, 8,537. 9.30 A. M., temperature, 98.6°; leucocytes, 6,666. 10 A. M., temperature, 98.6°; leucocytes, 6,785. 11 A. M., temperature, 98.6°; leucocytes, 6,785. 2 P. M., temperature, 98.6°; leucocytes, 11,652. 3 P. M., temperature, 98.6°; leucocytes, 15,206. 4 P. M., temperature, 98.6°; leucocytes, 12,500. 4.45 P. M., temperature, 98.6°; leucocytes, 10,500. The patient had no reaction, local or general.

November 29th.—8.45 A. M., temperature, 98.6° F.; leucocytes, 7,706. Sixteen cubic centimetres of 0.26-per-cent. KOH and 0.6-per-cent. NaCl injected. 10 A. M., temperature, 98.6°; leucocytes, 6,663. 10.15 A. M., temperature, 98.6°; leucocytes, 4,563. 10.30 A. M., temperature, 98.6°; leucocytes, 6,875. 2.45 P. M., temperature, 102°; leucocytes, 25,000. Reaction. 4 P. M., temperature, 102°; leucocytes, 18,235.

November 30th.—The patient had a very severe reaction during the night. Felt too ill to have blood counted. Temperature, 103°. Sixteen cubic centimetres of the KOH and NaCl solution injected.

December 1st.—9 A. M., temperature, 99.4° F.; leucocytes, 14,575. The patient had not recovered from the reaction of yesterday. Sixteen cubic centimetres of the KOH and NaCl solution injected. 10 A. M., temperature, 99.4°; leucocytes, 13,000. 10.30 A. M., temperature, 99.4°; leucocytes, 13,575. 11.15 A. M., temperature, 99.4°; leucocytes, 14,580. 2 P. M., temperature, 99.4°; leucocytes, 24,163. 3 P. M., temperature, 99.4°; leucocytes, 23,341. 6 P. M., temperature, 102°; leucocytes, 23,541. The patient had a very severe reaction, complaining of stiffness, numbness, headache, and nausea. The heart action was very weak, the sounds being very weak, and the rate was not increased in proportion to the temperature.

December 2d.—9 A. M., temperature, 100.2° F.; leucocytes, 27,288. Twelve cubic centimetres of a 0.26-per-cent. solution of KOH was injected. The patient was still under the effects of yesterday's injection, and felt very ill. 10 A. M., temperature, 100.2°; leucocytes, 24,787. 11 A. M., temperature, 100.2°; leucocytes, 25,206. 2 P. M., temperature, 102.4°; leucocytes, 26,250. Hard chill. 4.45 P. M., temperature, 104°; leucocytes, 19,164. 7 P. M., temperature, 104°; leucocytes, 21,041. The reaction was very severe.

December 3d.—8.30 A. M., temperature, 99.6° F.; leucocytes, 22,187. Sixteen cubic centimetres of a 0.6-per-cent. solution of NaCl injected. 10 A. M., temperature, 99.6°; leucocytes, 21,875. 11.15 A. M., temperature, 99.6°; leucocytes, 20,000. 1.15 P. M., temperature, 99.6°; leucocytes, 20,000. 3.15 P. M., temperature, 99.6°; leucocytes, 14,686. 5 P. M., temperature, 100°; leucocytes, 23,427. The patient had no reaction.

December 4th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 10,625. 11 A. M., temperature, 98.6°; leucocytes, 10,625. 1.30 P. M., temperature, 98.6°; leucocytes, 10,000. 5 P. M., temperature, 98.6°; leucocytes, 10,000. The patient received no injection on this day, and on the two days following there was none given. The leucocytes fell to their normal level, 6,000 to 8,000.

December 7th.—10 A. M., leucocytes, 8,750. Twelve cubic centimetres of a 0.26-per-cent. solution of NaOH injected. 10.30 A. M., temperature, 98.6° F.; leucocytes, 7,081. 11.45 A. M., temperature, 98.6°; leucocytes, 7,283. 3.30 P. M., temperature, 98.6°; leucocytes, 11,563. The patient had no reaction.

December 8th.—8.30 A. M., leucocytes, 7,867. Twelve cubic centimetres of the 0.26-per-cent. NaOH solution injected. 11 A. M., temperature, 98.6° F.; leucocytes, 7,869. 1.30 P. M., temperature, 98.6°; leucocytes, 10,000. 5 P. M., temperature, 98.6°; leucocytes, 8,768. There was no reaction, local or general.

December 9th.—8.30 A. M., leucocytes, 8,000. Twelve cubic centimetres of the 0.26-per-cent. NaOH solution injected. 10 A. M., temperature, 98.6° F.; leucocytes, 6,000. 1.30 P. M., temperature, 98.6°; leucocytes, 7,765. 5 P. M., temperature, 98.6°; leucocytes, 8,000. There was no reaction.

December 10th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 8,000. Twelve cubic centimetres of the 0.26-per-cent. solution of NaOH injected. 10.30 A. M., temperature, 98.6°; leucocytes, 6,786. 1.30 P. M., temperature, 98.6°; leucocytes, 8,000. 5 P. M., temperature, 98.6°; leucocytes, 7,867. The injection of the NaOH solution was continued two days. There was no reaction, and no change in the leucocyte range.

(To be concluded.)

A STUDY OF THE NARES AND PHARYNX IN A CASE OF HÆMOPHILIA.

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(Concluded from page 769.)

FURTH believes hæmophilia to be most common in people of Israelitish descent, but gives no figures in support of this statement, nor does he stop to discuss the question whether this supposed predisposition would not vanish if all children were exposed to the traumatism which forms an integral part of the Jewish ritual.

Bleeding from the nose may result from many diverse conditions—from traumatism or from toxæmia in certain infectious diseases. The especial interest attached to the epistaxis in the case under observation was the frequency of the attacks of bleeding, the large amount of blood lost, and the manner in which it escaped from the blood-vessels. Unless the bleeding was due to traumatism, as when she picked her nose, it oozed from the erectile tissues, showing that a marked constitutional dyscrasia must exist, or else there were such grave morbid changes in the nasal tissues as to cause them to give way, with resultant bleeding, under causes decidedly insignificant. In nasal sclerosis, as was well seen in this case, bleeding is comparatively rare, except from the anterior lower portion of the sæptum, and is then only due to traumatisms irritating the parts over the anterior sæptal artery, resulting in ulceration and perforation. Here this did occur, but was infrequent, the principal hæmorrhages being a more or less general outpouring of blood through the sinuses covering portions of the turbinated bones.

Before this hæmorrhage would take place there was noticed a feeling of fullness in the head, especially over the bridge of the nose. We can account for this in no other way than by a localized vasomotor constriction (probably reflex), with rupture of the sinus walls, preceded by turgescence. The nasal cavities were studied several times before the hæmorrhage appeared; on several occasions, but a few hours before the epistaxis occurred. The turbinated bodies and cavernous tissue over the sæptum were seen to be congested, increasing to about one third their previous size; this lasted for about half an hour, and then gradual oozing occurred, increasing in amount until the tissues were not further discernible. The fullness of the head as a prodromal symptom of epistaxis seems to be of very common occurrence, especially in the infectious fevers, and is usually present preceding the nasal bleeding in typhoid fever. The characteristics of the blood in this case were its watery nature, coagulating very slowly, its small percentage of coloring matter and large number of red cells and increased leucocytes.

Hæmorrhage from the nose, in addition to those causes mentioned, may arise from a wide diversity of causes: the accessory nasal sinuses may be the seat of the bleeding, and the blood escaping through their openings in the nasal cavity give rise to epistaxis; the hæmorrhage in these cases is not severe and the flow is slow, the blood coming but from one nasal cavity. In all local nasal disorders where there is epistaxis the bleeding in the large majority of cases is unilateral, while in general diseases accompanied or preceded with nasal hæmorrhages, or in serious blood dyscrasias, the epistaxis is bilateral. When the blood itself is the subject of morbid changes nasal hæmorrhages are common; this is seen most often in hæmophilia, as in the case under discussion. The nasal discharges may alternate with blood discharges from other portions of the body, hæmatemesis or hæmaturia occurring. Nasal hæmorrhage is frequent in the various forms of anæmia, both essential and secondary; it may be the cause of anæmia, or *vice versa*. In some cases of plethora bleeding is quite familiar to us all, being a common occurrence in childhood. In scurvy and allied disorders the nasal hæmorrhage may play a prominent part in the disorder. Mackenzie, in his book on the nose and throat, speaks of violent epistaxis seen in acute yellow atrophy of the liver and phosphorus poisoning, both the affections bearing a close relationship, the blood changes being identical.

The vessels of the nasal cavity may be diseased, either as the result of a general arterial change or the result of local changes in the nasal area. In the majority of cases these changes are atheromatous, the vessels of the sæptum being much less resistant to pressure or traumatism and requiring very little deviation from the normal to produce a break in their continuity. Arteritis and atheroma may be seen in the young as the result of syphilis and alcoholism, but are most frequent in advanced life.

In the majority of cases the hæmorrhage occurs from the anterior sæptal artery, a branch of the ophthalmic. In a smaller number of cases a true varicose condition of the nasal vessels may exist, and the slightest alteration in arterial tension suffices to produce free bleeding. These cases are more common than generally supposed, even the venous sinuses seeming to partake of the enlarged and tortuous character of the vessels. The nasal bleeding may again be the result of some obstruction to the general circulation, this being frequently seen in congestion of the liver or renal disease. It frequently takes place as the result of obstructive cardiac lesions. It is also observed in perfectly healthy individuals as the result of the increased tension from excessive or violent exercise, or even from an attack of coughing, the nasal arteries giving way under the increased strain brought to bear upon them. In the older works on medicine cases are frequently related of epistaxis coming on as the result of emotion or rage, the *modus operandi* being identical with that mentioned above. In a few authentic cases, as the result of emotional causes, the nasal bleeding has been so violent that death has resulted.

Loss of blood from the nasal cavities is occasionally seen alternating or replacing menstruation or other discharges, as the hæmorrhoidal flux. At the same time the molimina of menstruation or the symptoms peculiar to the discharge from hæmorrhoids are present, differing only inasmuch as the discharge in its original location disappears and epistaxis replaces it.

In the patient whose history I have cited the menses were replaced at irregular intervals by epistaxis. This was not a mere coincidence, as the usual phenomena of menstruation were present at the appropriate time and the hæmorrhage from the nasal mucous membrane lasted on an average three days, the usual duration of her menstrual flow. The more or less intimate relation between the nasal cavernous tissue and the genito-urinary apparatus is gradually being appreciated. Hobbs lately reported a series of cases in the *Laryngoscope*, the reflex phenomena occurring in males; and, although this peculiar variety of reflex action is seen in both sexes, yet I believe we find nasal hæmorrhage, and especially turgescence and engorgement of the nasal turbinal tissue, most frequently in females. The nasal turgescence is very common, probably occurring in all women as a normal part of the phenomena of menstruation, but the epistaxis from this cause is not so often seen. In an interesting review of the subject, Joal, of Mont Doré, insists particularly upon the genital factor in the production of epistaxis during adolescence, the exciting cause being either physiological, pathological, or artificial. The reflex connection between the nasal mucous membrane and the genital organs readily explains how epistaxis may be caused by the engorgement of the nasal corpora cavernosa, and Joal supports his views by citing a number of cases of onanism in which the tendency to nosebleed ceased when the vice had been corrected.

Of the severe injuries involving the cavity of the skull, nasal hæmorrhage is to some extent diagnostic of fractures of the anterior fossa. It may also antedate retinal hæmorrhage and apoplexy; in this latter connection no statistical observations have been recorded. The nasal hæmorrhage generally occurs several days before the cerebral hæmorrhage. Being without other signs of diagnostic importance, it is very apt to pass unnoticed.

The results of epistaxis on the general condition of the patient are usually syncope and anæmia, the former taking place if the hæmorrhage is excessively severe, or if much blood is lost over a lengthy period of time. The hæmoglobin percentage becomes very low, and extensive disorganization of the red cells takes place; in some cases even death has resulted from the profound blood changes. As a usual rule, but a small quantity of blood is lost from the nasal cavity, rarely exceeding an ounce, but in a few cases larger hæmorrhages have been reported. It is not always wise to depend upon the statements of the patient as to the amount of blood lost, as very little blood from the nose will to the patient appear as a great deal. There are cases on record where as much as ten and twelve pounds of blood have been lost from the nasal cavities; yet the cases reported were cited as cured. These cases, in my opinion, should be taken "*cum grano salis,*" as that amount would unquestionably produce death in a very inconsiderable period of time. Rarely is epistaxis fatal in itself, but in a person suffering from some long-continued illness or acute septic condition what would be a trifling nosebleed in health will assume a serious aspect.

If careful investigation is made it will be found that just preceding the epistaxis in the majority of cases there will be a peculiar pruritus involving the vestibule and anterior third of the nares, this usually coming on a few hours before the appearance of the hæmorrhage. I have seen some cases where it was present two or even three days before. The itching is peculiar, inasmuch as scratching does not afford relief, being constant and resisting all applications and remedial measures. In a few cases it appeared to me as being associated with an excess of uric acid in the system. In the majority, however, it appears to be nervous in origin, disappearing on the first manifestation of the hæmorrhage and not recurring until before the next attack. It is somewhat difficult, when the flow of blood from the nose is profuse, to accurately locate the bleeding point, a view of the interior of the nose not being always possible. It is of the greatest importance to ascertain the point from which the blood flows, so that the proper medicinal applications may be made. Where the flow is very fast, I have been in the habit of rapidly cleansing the nasal chamber with a coarse spray of peroxide of hydrogen under fifteen pounds' pressure, having at the same time a wide bivalve speculum in place; the flow of blood is then temporarily stopped, and a very good idea can be had if the bleeding comes from anywhere in the anterior half of the nasal chamber. Again applying the peroxide, an appropriate application can be made either of astringents or the cautery. Frequently the hæmorrhage will be posterior, and then the difficulty of ascertaining its site and controlling it is very much enhanced. In children having adenoid vegetations the bleeding may be high up in the vault of the pharynx, and then had better be controlled while the patient is under the influence of a general anæsthetic, applying whatever remedies may be thought necessary directly to the bleeding parts. I have found that in a general way some idea of the bleeding part may be gained by the character of the blood flow (*i. e.*, by the quantity lost). If the blood is bright red, not clotted, and flows in a steady stream, the anterior sæptal artery is the source of the bleeding; but if it comes away in drops, it probably originates from the sæptal or turbinal cavernous tissues; while if more blood descends into the pharynx than through the nares, the mischief is in the nasopharynx or posterior portion of the nares, usually from the extreme posterior end of the middle turbinated body.

The difficulty which sometimes arises in controlling epistaxis is well shown in the following case: A young man, under observation for several years for nasal polypi, five of which I had removed with the cold snare and without loss of blood, came to me a short time ago complaining again of nasal obstruction. It was found on examination that there was a large, firm tumor occluding the posterior extremity of the right nares; anterior to this there was an osseous synechia preventing the passage of even the smallest probe beyond, it thus forming a space free of morbid changes between the polyp and the synechia. As the tumor did not project into the nasopharynx and could not be pulled down so as to get the loop of the snare around it, it was found impossible to remove it until the synechia had been operated on, which operation I postponed for a few days later. In the interim he was attacked with epistaxis, nearly exsanguinating him before assistance could be procured. On cleansing the nasal cavities and nasopharynx the bleeding point was not seen, and, as the nose was normal anterior to the synechia and the nasopharynx posterior to the tumor, it was concluded that the point of bleeding lay between the two. The pharynx was continually covered with a flowing stream of blood, and at the same time the anterior bleeding was profuse. After all the astringent preparations thought of were tried, the nose was tightly packed with cotton plugs saturated with a twenty-per-cent. aqueous solution of ferripyrine, a plug also being placed in the nasopharynx; this controlled the hæmorrhage for a day and a half. On attempting to remove the plugs it started again and bled as furiously as ever. Finally, after two weeks' time had been consumed in plugging and replugging ineffectually, a fine Blake's aural syringe was filled with the ferripyrine solution and injected through the narrow opening along the nasal floor under the synechia. This injection controlled the hæmorrhage, but a few drops of blood escaped through the nares three or four days afterward, when it ceased permanently.

It should always be borne in mind that because the blood flows from one side of the nose it does not necessarily indicate that that side is the source of the hæmorrhage, as sometimes profuse bleeding is seen from the left nasal cavity, and remedies directed to the condition may be applied indefinitely; but if the nose is carefully cleansed of the blood and clots, it will be found that the blood is coming around the posterior part of the vomer and the right side is the source of the trouble. This has happened in a number of cases under my observation, and shows that careful examination of both nasal chambers should be made in all cases.

Hæmorrhage from the pharyngeal mucosa, as compared with epistaxis, is quite uncommon, and generally occurs as the result of traumatisms or the entrance of foreïgn bodies. The force exerted by the entrance of these foreign bodies is occasionally not sufficient to lacerate the mucous membrane, but simply bruises the deeper parts, producing an extravasation of blood under the mucosa. Collections of blood and petechial spots under the mucous membrane are occasionally seen in purpura hæmorrhagica, especially when the disease is of a severe character. After the healing of a slight wound of the pharynx (as when penetrated by a fish bone) this petechia may occur, but can readily be distinguished from vibices of purpura or hæmophilia by an inflammatory areola surrounding it; also in the other affections there are other lesions present on the mucous membranes or on the cutaneous surface of the body. In putrid sore throat ecchymoses are sometimes seen, but in this affection there is a violent grade of inflammation present, with local septic changes, which subsequently lead to necrosis. When, as the result of hæmophilia or purpura, ecchymoses occur on the mucous membrane of the pharynx, the blood will be found collected in the submucous tissues, and but slightly or not at all elevated above the surface. The color is more vivid than when the lesion occurs on the cutaneous surface, and does not undergo the color transformations as seen in the latter position. Pain and inflammation are not present, and unless hæmorrhages occur from the rupture of the mucous membrane or where a very large amount of blood is extravasated, producing a decided obstruction to the passage of the food, the patient is not aware of the lesion, and it is only discovered by visual examination.

"The Palacio," 55 East Sixty-fifth Street.

Therapeutical Notes.

Captol in the Treatment of Seborrhœa.—Captol, apparently a proprietary preparation, is described by Eichhoff (*Deutsche medicinische Wochenschrift*, October 7, 1897; *Therapeutische Wochenschrift*, October 17, 1897) as a condensation product of tannin and chloral, a dark-brown, hygroscopic powder soluble with difficulty in cold water, readily soluble in hot water and in alcohol, and destroyed by alkalies. It is said to combine the desiccative action of tannin with the antiparasitic virtue of chloral, and to be free from the objectionable properties of each of its constituents. A one- or two-per cent. alcoholic solution, used as a hair-wash night and morning, is said to be of great service in cases of seborrhœa of the scalp with loss of hair.

Papayotin in the Treatment of Leucoplakia Oris.—H. Niemeyer (*Deutsche Monatsschrift für Zahnheilkunde*, August, 1897; *Deutsche Medizinal-Zeitung*, November 11, 1897) reports a case in which syphilis could be excluded, and the disease was attributed to a burn from hot coffee and to immoderate smoking. It was cured by the patient's giving up smoking, alcoholic drinks, and irritating food and by the daily application of Schwimmer's solution of papayotin, namely:

℞ English papayotin................	1 part;
Distilled water, Glycerin, } each............	10 parts.

M.

An Ointment for Pruritus.—The *Journal de médecine de Paris* for October 3d attributes the following formula to Coover:

℞ Yellow oxide of mercury..........	1 part;
Vaseline..........................	200 parts.

M. The ointment should be applied at bedtime and also, if necessary, in the morning, by firm and prolonged friction, the affected parts having been previously washed with warm soap and water. It is said to allay the most intense itching.

Mueller's Tooth Wash, according to the *Centralblatt für die gesammte Therapie* for October, is composed as follows:

℞ Thymol..........................	1 part;
Benzoic acid......................	12 parts;
Tincture of eucalyptus............	60 "
Alcohol...........................	400 "

M. S.: A teaspoonful to be diluted with half a wineglassful of water.

Unna's Ichthyol Ointment for Profuse Sweating of the Feet.—The formula is given as follows in the *Gazette hebdomadaire de médecine et de chirurgie* for October 14th:

℞ Ichthyol.........................	25 parts;
Water.............................	15 "
Lanolin...........................	25 "

M.

THE
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VASCULAR CONSTRICTION BY THE USE OF EXTRACT OF THE SUPRARENAL CAPSULE.

ABOUT a year and a half ago Dr. Alois Velich, an assistant in Professor Spina's experimental pathological institute, in Prague, published an article in which he treated of the local anæmia that could be produced in mucous membranes by applications of the extract. In a recent communication published in the same journal, the *Wiener medizinische Blätter*, in the number for November 11th, he refers to his former observations and to those of Bates, Darier, Dor, Königstein, and Hajek. His present article deals with the action of the extract on the unbroken skin and on sarcomatous tissue.

He finds that the extract produces local anæmia when applied to the skin, not only when there is a lesion of continuity of the epidermis, but also when the cuticle is unbroken. Even the normal ruddy hue of the skin disappears, and after the prolonged application of the extract such cutaneous hyperæmia as is due to an angeioneurosis subsides. He mentions some interesting observations concerning the effects of applications of the extract to portions of skin affected with eczema. So sharply, it seems, is the action of the drug limited to the site of its application that one may write in white with it on skin reddened by eczema or by scalds. After scalding a part to the degree of rubefaction, he applied to a portion of the scalded area a wad of cotton wet with the extract, and in a few minutes the skin, before highly hyperæmic, grew pallid, while the remainder of the scalded skin remained red and vesiculation followed. In view of such a result as this, the prevention of vesiculation in an inflamed patch of skin, it occurs to us that it might be worth while to apply the suprarenal extract to the face during the early part of the eruptive stage of small-pox, with the object of hindering the formation of pocks and thus doing away with the disfigurement of the face in the shape of pitting that is so apt to follow the disease. In cases of intertrigo also Velich has brought about the disappearance of the hyperæmia by applying compresses imbued with the extract. In experiments on a number of rats affected with sarcoma he has observed that the application of the extract produced anæmia of the sarcomatous tissue.

In chronic hyperæmia the action of the extract, he finds, is not so decided, whether the hyperæmia affects the skin or a mucous membrane. This is to be explained, he thinks, by paralysis of the peripheral vasoconstrictor apparatus, since it is by stimulating that mechanism that the drug acts; indeed, he is convinced that whenever the extract fails to reduce the amount of blood in a part it is a proof that the vasoconstrictor nerves are no longer responsive to stimulation. He promises to publish an account of the experiments on which he founds his conviction on this point.

Velich concludes that the use of the juice of the suprarenal capsule—he speaks of both the juice and the extract—is undoubtedly a safe and easy method of treating hyperæmia, but it can not yet be maintained, he adds, that it is of any further therapeutic value, although additional experiments may show that it is. His clinical investigations were made in Professor Deyl's clinic. In the *Journal* for May 16, 1896, we published an excellent article on the action of the extract of the suprarenal capsule, by Dr. W. H. Bates, of New York. Dr. Bates gave full directions for the preparation of an aqueous extract.

RETAINED LOCHIA AND THE EPHEMERAL FEVER OF LYING-IN WOMEN.

DR. E. BUMM, of Basel (*Centralblatt für Gynäkologie*, November 13th), speaks of the disappointment felt by himself and his colleagues of the Basel Gynæcological Clinic at the almost complete lack of reduction in the number of cases of post-partum fever observed since the time when the clinic was installed in a new building fully provided with all known means of maintaining asepsis. These means, together with the methods of their application, are described by Dr. Bumm, and we can not see that any fault is to be found with them. Nevertheless, of the last seven hundred and fifty confinements in the institution, a hundred and seventy were followed by fever, all cases in which the temperature rose to 100.4° F. at any time being set down as cases of fever.

In twenty-seven of these women, that is to say, sixteen per cent. of those that had fever, it was accounted for by some disease not connected with the genital apparatus, such as phthisis, pneumonia, angina, etc. Ninety-five of them, or fifty-five per cent., owed their fever to some morbid process in the parturient canal, namely:

22 to streptococcus infection,
1 " infection with the colon bacillus,
11 " gonorrhœa,
58 " putrid intoxication,
3 " phlegmonous mastitis.

There remain forty-eight cases of fever, or twenty-nine per cent., in which no sort or amount of investigation availed to reveal the cause. The author believes that in these cases it was the pressure under which the lochial secretion was retained in the uterus, favoring absorption, that was the occasion of the fever. The old doctrine of stagnation of the lochia, he says, may thus again come into acceptance, though not, indeed, with the idea of an actual metastasis to other organs, but in the sense of a pent-up secretion such as may be observed in deep wounds of various sorts. The opening of a foul abscess, says Bumm, brings relief from fever, not because the bacteria are thereby entirely removed at once—that does not occur until afterward—but because the contents are no longer under a pressure that provokes absorption. He argues that the same thing may be true of the wounded interior of the uterus.

Quite as many of these cases of stagnation fever occurred in women who had been subjected to minute examination as to the bacteriological condition of the parturient canal as in those that had not been so examined. As to whether the germs that gave rise to the trouble existed in the vagina before labor or gained entrance subsequently, the author is uncertain, but believes the latter to have been the case. It is much easier, he says, for germs to get into the vulva and the vagina from without than for them to be carried from the vagina into the uterus.

As regards the causes of the increased intra-uterine pressure, Bumm remarks that brisk movements on the part of the patient may give rise to it quite as readily as her first assumption of the standing posture, and stasis may take place in particular parts of the uterine cavity more commonly than in the organ at large, such as the sinuses of the placental site and the corners of the cavity where the Falloppian tubes have their outlets, and such occurrences may well elude observation.

MINOR PARAGRAPHS.

DIGESTIVE DISTURBANCES DUE TO HERNIA.

KUTTNER (*Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie*, i, 5; *Centralblatt für Chirurgie*, October 30th) says that cases of this kind, although well known to surgeons, are hardly mentioned in works on diseases of the digestive organs and are regarded by many physicians as gastric neuroses. The symptoms are the same, whether they depend on subperitoneal bands dragging on the diaphragm or on actual hernias, for the most part omental; they are colicky pains, often with vomiting, or slight bad constant pains in the belly, with eructations, loss of appetite, nausea, and vomiting. An operation for the radical cure of the hernia almost always proves a lasting cure for these symptoms.

THE PRESERVATION OF ERGOT.

M. LÉON AYMONIER (*Journal de pharmacie et de chimie; Nouveaux remèdes*, November 8th) says that when he receives any ergot he treats it with ethereal tincture of balsam of Tolu, by the same process as that of coating pills with Tolu, dries it, and preserves it in a stoppered bottle. By this simple procedure, he says, he has kept ergot intact for seven or eight months, and he believes it may be kept so indefinitely.

THE BILLROTH MONUMENT IN VIENNA.

THE *Wiener klinische Wochenschrift* for November 11th devotes its first page to a picture of the Billroth mural monument, which was unveiled on the 7th of November. Billroth is represented as reading from a manuscript spread out on a desk. The inscription is Theodor Billroth Professor der Chirvrgie 1860–1867 in Zverich 1867–1894 in Wien. The monument stands in the arcade of the University of Vienna.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 7, 1897:

DISEASES.	Week ending Nov. 30.		Week ending Dec. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	28	5	50	11
Scarlet fever	125	7	146	9
Cerebro-spinal meningitis	0	0	0	0
Measles	231	8	277	19
Diphtheria	205	26	179	24
Croup	6	4	6	6
Tuberculosis	153	93	212	81

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, and cholera were received in the office of the supervising surgeon general during the week ending December 4, 1897:

Yellow Fever—United States.

Mobile, Ala	Nov. 25–29	2 cases.	
New Orleans, La	Nov. 27–29	5 "	3 deaths.

Yellow Fever—Foreign.

Cardenas, Cuba	Nov. 14–21		1 death.
Cienfuegos, Cuba	Nov. 13–20		1 "
Havana, Cuba	Nov 18–25		9 deaths.
Regla, Cuba	Nov. 18–25		5 "
Sagua la Grande, Cuba	Nov. 13–20	37 cases,	6 "
Santiago de Cuba	Nov. 6–20		5 "
Port au Prince, Hayti	To Nov. 10	2 "	1 death.
Brown's Town, St. Ann's, Jamaica	Nov. 6–13	7 "	
Buff Bay, Jamaica	July 30–Nov. 13	1 case,	1 "
Kingston, Jamaica	July 30–Nov. 13	72 cases,	31 deaths.
Manchester, Jamaica	July 30–Nov. 13	20 "	7 "
Morant Bay, Jamaica	Nov. 6–13	1 case,	1 death.
Port Antonio, Jamaica	July 30–Nov. 13	4 cases,	4 deaths.
St. Catherine, Jamaica	Nov. 6–13	3 cases.	
Vera Cruz, Mexico	Nov. 11–18		1 death (at quarantine).

Smallpox—United States.

Birmingham, Ala	Nov. 20–27	8 cases.	
Atlanta, Ga.	Nov. 19–26	15 "	
Bay City, Mich	Nov. 20	Smallpox reported.	

Smallpox—Foreign.

Cienfuegos, Cuba	Nov. 14–21		1 death.
Bristol, England	Nov. 6–13	1 case.	
Gibraltar	Nov. 1–7		1 "
Odessa, Russia	Nov. 5–12	3 cases.	
Glasgow, Scotland	Oct. 31–Nov. 13	10 "	1 "
Madrid, Spain	Nov. 2–16		3 deaths.

Cholera.

Madras, India	Oct. 23–29		1 death.

The Brooklyn Gynæcological Society.—The regular order for the meeting of Friday evening, December 3d, was a paper on The Treatment of Incomplete Development of the Uterus, by Dr. A. J. C. Skene. The officers of the society for the year 1898 are as follows: President, Dr. J. C. MacEvitt; vice-presidents, Dr. William H. Skene and Dr. Frank Baldwin; recording secretary, Dr. Frederic J. Shoop; corresponding secretary, Dr. O. A. Gordon; treasurer, Dr. L. G. Langstaff; pathologist, Dr. W. H. Seymour.

The Brooklyn Pathological Society.—At the three hundred and ninety first regular meeting, on Thursday evening, the 9th inst., the programme included the following papers: The History of the Brooklyn Pathological Society, by Dr. William Schroeder; and A Report of a Series of Autopsies Showing Injury of the Abdominal Viscera Following Injury, by Dr. W. N. Belcher. Cases were to be reported and specimens were to be exhibited by Dr. J. M. Clayland, Dr. G. W. Stivers, and Dr. J. M. Winfield.

The Late Dr. Harrison Allen, of Philadelphia.—At a meeting of the Philadelphia Neurological Society held on the 22d of November the following action was taken:

Whereas the Philadelphia Neurological Society has heard with great regret of the death of Dr. Harrison Allen, it desires to offer its sympathy to his family, and to give expression to its sense of the great loss which has been sustained by science and the medical profession.

Dr. Allen was deeply interested in neurology, not only as a human and comparative anatomist, but also in various practical directions, as indicated by his valuable contributions to this society and other medical bodies.

[Signed.] CHARLES W. BURR, *President.*
WILLIAM G. SPILLER, *Secretary.*

The Laryngoscope.—We learn that the St. Louis journal entitled the *Laryngoscope* will be published also in Bristol, England, by Messrs. John Wright & Co., beginning with the issue for January, 1898.

Changes of Address.—Dr. Arthur B. Duel, to No. 109 Madison Avenue, New York; Dr. V. Fuentes, to No. 170 West One-hundred-and thirty-third Street, New York; Dr. Mark W. Peyser, to No. 311 West Twelfth Street, Richmond, Virginia.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 28 to December 4, 1897:*

CORSON, JOSEPH K., Major and Surgeon, having served more than thirty years in the army, is, on his own application, by direction of the President, retired from active service November 30th.

DUTCHER, BASIL H., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Leavenworth, Kansas, and ordered to Fort Grant, Arizona, for duty at that station.

STRONG, NORTON, Captain and Assistant Surgeon, is granted leave of absence for three months, to take effect December 1st.

Society Meetings for the Coming Week:

MONDAY, *December 13th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Harlem Medical Association of the City of New York; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

TUESDAY, *December 14th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Oswego (semiannual—Oswego), Rensselaer, and Ulster (quarterly), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *December 15th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Medical Societies of the Counties of Cortland (semiannual) and Tompkins (semiannual—Ithaca), N. Y.

THURSDAY, *December 16th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private).

FRIDAY, *December 17th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

MOSELY—DUNLAP.—In Sardis, Mississippi, on Sunday, November 28th, Mr. R. L. Mosely and Miss Lenoir Dunlap, daughter of Dr. D. C. Dunlap.

SAUNDERS—GATES.—In South Lima, N. Y., on Monday, November 29th, Dr. D. Saunders and Miss Harriet Gates.

TIEMAN—HENDERSON.—In Port Chester, N. Y., on Saturday, December 4th, Dr. Paul Ernest Tieman, of New York, and Miss Susie Cresswell Henderson.

Died.

GILCHRIST.—In New York, on Friday, December 3d, Dr. William N. Gilchrist, aged seventy-four years.

MUNROE.—In Providence, Rhode Island, on Friday, December 3d, Dr. George A. Munroe, in the sixtieth year of his age.

OLMSTEAD.—In New York, on Saturday, December 4th, Dr. James Olmstead, aged forty-eight years.

PERRY.—In New Orleans, on Tuesday, November 30th, Mrs. Ellen A. Parker Perry, wife of Dr. Alfred W. Perry, of San Francisco.

STEIN.—In New York, on Sunday, December 5th, Dr. Alexander W. Stein, in the fifty-seventh year of his age.

Letters to the Editor.

ANENT THE BLOOD TEST OF DIABETES BY MEANS OF ANILINE COLORS.

3723 WEST PINE STREET, ST. LOUIS, *November 25, 1897.*

To the Editor of the New York Medical Journal:

SIR: In the issue of March 7, 1896, of this journal I described a blood test for diabetes under the head of An Improved Method of Diagnosticating Diabetes from a Drop of Blood. Owing to a number of inquiries from physicians who have repeated my experiments but failed to obtain positive results, I have endeavored to still further simplify my method, so as to enable the general practitioner to avail himself of this means of diagnosis, which, I affirm, is more reliable than the sugar test, or, to say the least, enables the physician to arrive at a definite conclusion where the ordinary sugar tests give ambiguous results.

There were two factors in the method published in this journal causing uncertainty and divergence of results in the hands of experimenters not entirely familiar with the details of hæmatological researches: 1. The indefinite chemical composition of the reagent recommended and described by me, an eosin-methylene-blue compound, rather difficult of preparation. 2. The insufficient exactness of the process recommended for hardening the blood film.

I have succeeded in doing away with these objectionable features and I have devised a method which even persons of limited experience or none at all in hæmatological work will be able to execute. A description of this modification was published by me in the *Centralblatt für innere Medicin*, 1897, No. 22 (Die Diagnose des Diabetes mellitus aus dem Blut mittels Anilinfarben); short accounts also appeared in the *Medical Review* (St. Louis) for March 27, 1897, and in the *Semaine médicale* for August 5, 1896. A more exhaustive treatise was presented by me to the Section of Internal Medicine at the Moscow Congress and will appear in the *Transactions* of that body.

The sum and substance of these articles is, that I have discarded the eosin-methylene-blue compound for practical naked-eye demonstrations, and that the hardening of the blood film by means of boiling ether and alcohol has likewise been abandoned. The color reagents now employed by me are Congo red, methyl blue (not methylene blue), and Biebrich scarlet. The hardening of the blood film and the fixation of the hæmoglobin of the erythrocytes are now effected by heat exclusively.

Briefly stated, the mode of procedure is as follows: Prepare two sets of blood specimens, one of diabetic, the other of non-diabetic blood, the films to be spread in rather thick layers on cover-glass slips or slides. The latter are preferable for naked-eye demonstration, because they are more easily handled. Place the two sets, say eight or ten of each, in a heating oven, the tray on which they rest to be at least six inches above the bottom of the apparatus. By means of a good-sized gas flame run the temperature up to 135° C. (this being the heat optimum) within from eight to ten minutes. After cooling, place two slides, one with a diabetic, the other with a non-diabetic blood film, back to back, in a one-per-cent. aqueous solution of any of the stains above named for from two to five minutes. Then rinse thoroughly in distilled or filtered water and dry. It will be found that Congo red and methyl blue have not stained the diabetic blood, or on prolonged exposure have stained it feebly, whereas the non-diabetic blood film has assumed the red or blue stain respectively. Biebrich scarlet has the opposite effect; it stains the diabetic but not the non-diabetic blood, unless the specimens remain too long in the reagent. The solutions ought to be freshly prepared, old ones losing the differential staining capacities.

The dyes mentioned are, however, not the only ones with which the diagnostic color reaction may be obtained. In the communication to the Moscow Congress referred to above, a list of quite a number of other dyes experimented with will be given. Of late I have found acid violet and phloxin in one-per-cent. aqueous solution available. The latter stain acts very rapidly: In two or three seconds a differential color is obtained. A few seconds more suffice, however, to efface the color difference.

The reliability and positiveness of my tests were demonstrated before the Société médicale des hôpitaux (Paris) by Dr. P. Marie, physician in chief of the hôpital Bicêtre, and Dr. Jean le Goff (P. Marie et J. le Goff, *Bull. et mém. de la Soc. méd. des hôp. de Paris*, No. 16, p. 626). Again, in a monograph on the subject, Sur certaines réactions chromatiques du sang, Le Goff describes my methods and testifies to the exact reproduction of my results. Lépine and Lyonnet (*Lyon médical*, June 7, 1896) affirm likewise the correctness of my observations, but maintain that leucæmic blood gives the same reaction as diabetic blood. This is true only of the eosin-methylene-blue compound, when the alkalinity of the reagent, by the predominance of the methylene blue, is excessive. With a more neutral combination the difference is easily established. When the reagents mentioned above for naked-eye demonstration are employed, the difference of the stains is as marked as when any other non-diabetic blood is used for check specimens. I do not think that, as is maintained by the same observers, the differential reaction is a mere matter of a different degree of acidity and alkalinity of the blood, but hold that a peculiar change of the hæmoglobin of the diabetic erythrocytes is at the bottom of the phenomenon. What the nature of this change is, I do not know. Le Goff also repudiates the theory advanced by Lépine and Lyonnet. The experiments of V. Patella and A. Mori (Reazioni cromatiche del sangue dei diabetici, *Gazzetta degli ospedali e delle cliniche*, November 15, 1896) yielded negative results, because these investigators did not strictly adhere to the directions laid down by me.

L. Bremer, M. D.

THE WEIGHT OF NEWBORN INFANTS.

Boston, *November 23, 1897.*

To the Editor of the New York Medical Journal:

Sir: In the *Journal* of November 13th is an item by Dr. Hartigan concerning the unusual weight of a newborn child belonging to undersized parents. In twenty-five years of observation I have remarked that it is usual for large parents to have proportionally small children, and *vice versa*, also that the smallest infants develop into the largest adults as a rule.

These observations have all been made in the South. Two of these cases were so remarkable that I could never forget them. A baby boy weighing at birth two pounds and a half was at six years of age only as large as a normal two-year-old child. At twenty-two he was six feet three inches and of magnificent proportions. This was in Texas. The second case was that of a Virginian, but his parents were Pennsylvania Dutch of the tall, bony, cragged construction. The baby was not weighed, but his aunt put him in a quart cup, so she told me, and slipped her finger ring over his hand. They did not think it possible so tiny a morsel could live. Through many vicissitudes he became a man six feet four inches in height and weighing somewhere between two and three hundred pounds.

In my own practice, the largest infant at whose advent I have been present weighed fifteen pounds and the smallest three and a half; the parents in both instances were of medium size. In general, I have noticed that the little, scrawny, puny, sickly children that spend a good part of their time lying down and whose diet has been invalid's food more than half the time become the largest, strongest, and healthiest adults. As I recall the different infants, they were all of the male sex, not one of the female sex among the number, and the question just now arises in my mind, "Why should this be so?"

SARA NEWCOMB MERRICK, M. D.

FORT SCOTT, KANSAS, *December 2, 1897.*

To the Editor of the New York Medical Journal:

SIR: I wish to report what I consider a phenomenal weight for a child at full term. On November 7, 1897, I was called to a confinement and delivered the mother after she had been in labor four hours. The child weighed just a pound and seven ounces. The weighing was done in presence of four or five persons. The child was a boy of nine months' development, as proved by the presence of the testes in the scrotum, the complete formation of the finger nails, which extended beyond the finger tips, and the condition of the eyelashes, hair, etc. There is absolutely no reasonable doubt concerning the full development of the child. The parents were rather small, weighing, the father a hundred and forty pounds, and the mother, in health, a hundred and twenty pounds.

I will further state that all methods known to the mother had been exhausted, without results, in trying to rid herself of the babe, and for two months she had been confined to bed, first with acute articular rheumatism, which was followed by various other ailments.

The babe cried lustily on its advent into the world and breathed well for half an hour, when it began to weaken. In just an hour and a half from birth death came.

F. C. RAINIER, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of October 6, 1897.

The President, Dr. ROBERT J. CARLISLE, in the Chair.

Address of the President.—Gentlemen of the Society: Should any one doubt the development and growth in strength and importance of this society, let him compare her youthful days with these, when she inaugurates her president; and, were he to stand where I do now, he would be deeply impressed with the responsibility placed upon him. He would feel also, as I do, that to be president of the Society of Alumni of Bellevue Hospital is a high honor, and one of which he may be justly proud.

I am proud, therefore, gentlemen, of that honor that you have conferred upon me, and when I say that during my term of office I will strive to be as active, diligent, and efficient in advancing the interests of the society as my immediate predecessor has been, and to be as worthy of a place in the long honor-roll of those who have preceded me, I think you can ask no further declaration or assurance from me.

My experience as chief steward had almost produced on my mind a wrong idea of the character of this organization. Although I knew, in a general way, of its twofold purpose in life, I had nearly become convinced that it was a society of gastronomers banded together for the furtherance of the art of gastronomy. There is no doubt that the bump of alimentiveness, as the phrenologist says, in this body is a large one (and why should it not be in a society of alumni?), but it is located, methinks, in the abdominal and not in the cerebral region; and I had arrived at the conclusion that amicability and love of kind had their centres likewise in the abdomen, but higher up, say in the scrobiculus cordis; so that as the first centre became larger the last two became deeper. Be that as it may, I now approve of the custom in vogue, of placing the vice-president in charge of the social department, as a wise one. To have a perfect idea of a whole, one must have a vivid conception of all the parts. It is a fact that you can get at a man by way of his alimentary canal better and easier than in any other way—and when one has put potential energy in, he has a right to expect kinetic energy out. As in the normal man, so also in an association of normal men: when the body is well nourished, each and every part is well nourished with it. I commend these few suggestions to my successor in that office.

This being the beginning of a new year with us, it would be proper in an address of this kind to review the field of scientific research, to sum up the established facts, and to point out in what manner our energies should be put forth to further the advance of medicine and surgery. I wish I were capable of doing it. The new developments in all departments of medicine are bewildering in numbers. It is hard to keep pace with them—in anatomy, physiology, and chemistry. To refer to but a few: in anatomy, for instance, the recent investigations in the histology of the neurone made possible by the newer microscopical technique, and their possible bearing upon the physiology of the nervous system; the revelations in the anatomy and physiology of the blood, both in normal and in pathological states; in physiology and in chemistry, the work done and being done in regard to the functions of the ductless glands, suggested by the discovery of the therapeutic value of thyreoid extract—you know of them all and it is not my intention to rehearse them. But I would like to mention a subject of great interest in which much work is being done that gives promise of much good result, and that is, the subject of intoxication in disease. The work of Pasteur in proving that bacteria were the cause of putrefaction, suggesting the possibility that poisons produced by bacterial growth were the causes of many of the symptoms of diseases known to be of bacterial origin, led on to the recent work in physiological chemistry and pathology looking to the discovery of a toxic principle or principles, either bacterial or metabolic in origin, which acted as the causes of many diseased states. The bearing of this on the ætiology of gout and of the so-called lithæmic condition, on some of the diseases of the skin, in epilepsy, tetany, etc., is but suggested.

In connection with epilepsy I beg to quote from the sixth edition of the work on *Practice of Medicine* of the late Austin Flint, as showing the wonderfully thoughtful and close observer and advanced physician that man was. Under the head of epilepsy, page 825 (this was written in 1886), he says: "In a large proportion of cases of epilepsy no sources of centric or of excentric irritation are apparent. That under these circumstances the epileptic paroxysms are due to the action of an internal and at present unknown toxical agent seems to me the most rational hypothesis. Epilepsy, according to this hypothesis, is a toxæmia analogous to uræmia, the toxical agent being produced at variable intervals, the quantity and the continuance of its production not being sufficient to endanger life; and in this respect the contrast with uræmia being striking. If this pathological view be correct, knowledge of the nature and source of the toxical agent, which may, perhaps, be acquired, will, as we may hope, render this disease controllable." It is in this class of diseases, it seems to me, that much good work will be accomplished in the not far-distant future.

I wish to take this opportunity to refer to the reports of work done here—our published *Transactions*. Our reports being the evidence of our work and its character, every effort should be made to keep them abreast of the times. The papers read, whether they report original investigation or not, should show that the author is fully cognizant of the progress made in the particular department of science under discussion; and, if for any reason the report is incomplete, it ought not to be because the writer did not know better; and in the discussion no one should attempt to discuss a question who is not informed on the subject; he should come prepared, and in discussing be exact and stick to the point.

I thank you again, gentlemen, for this honor and your kindness to me in the past, and bespeak your aid in upholding this society as the peer of any.

Osteosarcoma of Jaw; No Recurrence in Ten Months after Excision.—Dr. J. W. S. Gouley presented a patient whom he had shown to the society during the past winter. The case was that of the young man from whom he had removed the superior maxilla of the right side for an osteosarcoma—a very dense osteosarcoma in which there had been some giant cells and spindle cells, but in which the osseous element had largely predominated. He said that the tumor had not apparently recurred in the ten months that had elapsed since the operation. It was evident that the man's speech had decidedly improved, and he had now learned to eat without removing the dental appliance. No food whatever passed through the nose. That no recurrence had taken place was probably due to the fact that the tumor had been undergoing a progressive rather than a retrogressive change. It was well known that sarcomata which tended to become converted into fibrous tissue were less malignant than the other varieties. In another case of this kind he would prefer to sacrifice less tissue; it would have been better, he thought, if he had preserved more mucous membrane and periosteum. The starting point in this case had not been the periosteum, but the bone itself.

Dr. A. B. Johnson said that the result in this case was most excellent, yet it had occurred to him that the dental plate could be so fixed in the mouth as to allow of the patient chewing upon it. He was reminded of the case of a child whom he had presented to the society about two years after the removal of a sarcoma of the lower jaw. There had been no recurrence then, and he had heard quite recently from the child, and the report had been that there was still no return of the disease.

Pyosalpinx.—Dr. Frederick Holme Wiggin presented the uterus, tubes, and ovaries that had been removed by the abdominal route on September 20th for pyosalpinx from an Armenian—A. S., aged about thirty-five years—a patient at the City Hospital. No previous history could be obtained, as she was unable to speak English. Vaginal examination had shown fixation of the uterus and enlargement of both tubes. After the removal of the uterus, the round ligaments had been fastened to the vaginal wall to prevent its descent, and the wounds in the latter closed. The peritonæum had also been brought together and closed. After the insertion of the sutures in the abdominal wall, the abdominal cavity had been filled with saline solution, and this had been allowed to remain in the cavity. The patient had made a good recovery, with the exception of a few superficial points of infection around the sutures. The uterine and tubal infection was probably due to gonorrhœa.

Pyosalpinx and Appendicitis.—Dr. Wiggin also presented a tube and ovary removed by operation on October 3, 1897, from a woman, thirty-seven years of age, a patient of Dr. Rodger's, of Woodbury, Conn. The woman had been married fifteen years. Her first menstruation had occurred in her fourteenth year, and for about eight years had been irregular, tending to recur about every five or six weeks, but without pain. She had been married at the age of twenty-two, and eleven months afterward had been delivered of a child. There was a history of some infection having occurred at this time. Two other children had been born later. Three years ago she had had a miscarriage, followed by an illness of several weeks. Since that time menstruation had been regular. She had complained of a great deal of pain on the right side, and had given a history of recurring appendicitis. The examination had revealed a spot of localized tenderness over "McBurney's point." The vaginal examination had shown the uterus to be enlarged, but in fairly good position, and the right tube to be considerably enlarged. A week after this examination the uterus had been curetted, the perinæum repaired, and then an incision made over the right rectus muscle, which had been split. On introducing the hand into the pelvic cavity it had been found that the appendix was adherent to the tube and ovary. Between the time of the operation and the first examination there had been a free discharge from the uterus, and the tube had shrunk somewhat. The appendix was about seven inches long, and somewhat inflamed and thickened. It had been evident that the cause of the peculiar tenderness over "McBurney's point" was an area of localized peritonitis on the cæcum, limited to one side of the base of the appendix vermiformis, and measuring about an inch in diameter. The tube had been very much inflamed and the ovary enlarged, so both had been removed. The stump of the appendix was turned into the cæcum and a running suture passed around it, according to the method of Dawbarn. So far convalescence had been satisfactory.

In answer to a question, Dr. Wiggin said that he had done an abdominal and not a vaginal hysterectomy because his experience had led him, in a case of fixation with probable septic complications, to prefer the abdominal route. It could be done more quickly and the exact condition could be better determined. He now confined the vaginal operation to cases in which the uterus was more or less movable, and where there was reason to believe there were no long-standing adhesions.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Congress, held in Washington, D. C., Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. Charles H. Knight, of New York, in the Chair.

(*Continued from page 712.*)

Tertiary Ulceration Simulating Sarcoma of the Tonsil.—Dr. D. Bryson Delavan, of New York, read a paper on this subject. (See page 769.)

A New Method for the Permanent Relief of Certain Enlargements of the Turbinated Bodies.—Dr. Delavan also read a communication with this title. (See page 798.)

Dr. Casselberry: What is the extent of the sweep of the knife after it has been introduced, so that the minimum amount of injury with the maximum amount of good results would follow?

Dr. Delavan: That would be in accordance with the amount of hypertrophy. The knife makes an external wound of only about an eighth of an inch.

Dr. Swain: How many punctures do you make?

Dr. Delavan: I generally carry the knife once or twice under the enlarged anterior extremity of the turbinated body, where it is most voluminous, and after making a very slight sweep draw it out again.

Dr. Newcomb: How long have the cases been under observation? In the course of a few weeks does not the condition reproduce itself?

Dr. Delavan: I am very glad to have this question asked, as it is the reason why I first devised the operation; it is more efficient than any other method. In a young lady, twenty years of age, I had exhausted all resources, local and general; I then performed this operation, partly in the hope that the mental effect might have a beneficial influence, and partly for the idea that for a time it would relieve the congestion and thickening so as to enable her nervous system to build up, as she had been able to get but a little sleep for several nights. She was at once relieved by the operation, and the condition did not recur.

Dr. Wright: When this method of treating hypertrophies was first mentioned to me yesterday by Dr. Delavan, I did not think much of it; but on hearing him read his paper, I have come to the conclusion that it is a very good suggestion. The results are probably due to breaking up of the coats of the vessels and making a clot, and it seems like a very rational procedure. As to how long its effects would remain it is hard to say, but we know that cauterization of the surface only produces a good effect for a comparatively short time. It has occurred to me, as to others, that no matter how deep you cauterize, the condition for which it is done will sometimes return. If you do not correct the systemic disturbances on which it often depends the hypertrophy will return after any method of operating.

Dr. Casselberry: In reference to the little operation upon the turbinated body, I should consider it at least a valuable temporary procedure, and its effects might be lasting where the hypertrophy is chiefly anterior or median. Even with posterior turgescence of the turbinated bodies a reduction is often afforded by division of the vessels of the front and median parts. I do not mean to say that firm hypertrophies of the posterior ends would be relieved, as by a removal of a portion of the tissue, but mere congestion and erection at the rear end is often reduced by cauterization from in front, which does not reach to its exact site, and the same would be expected from Dr. Delavan's method.

The case of simulated sarcoma carries an excellent lesson. I would suggest that the clinician should insist upon complete harmony between the clinical aspects of the case and the report of the pathologist, and I should be very suspicious of the report of a pathologist which did not correspond with the clinical appearance, especially when based upon a very small piece of the growth.

Dr. Clark: I think that most of us have seen cases of growths in the nose or throat of which the histological character has been for a time in doubt. A case of this sort came to my clinic recently. The patient, a woman of about fifty, had had a sore throat for several months. The right tonsil was considerably enlarged, spreading out in an irregular way over the anterior and posterior pillars of the fauces and having a superficial slough on its surface. The patient's general appearance was good, with no evidence of cachexia. No enlarged cervical glands could be felt. I made up my mind that the growth was probably malignant, but in order to rule out syphilis I put the patient on the use of iodide of potassium. The portion of the growth projecting over the anterior pillar, removed at this time for microscopic examination, was reported by the pathologist to be simple hypertrophy. Not satisfied with this diagnosis, I removed the portion projecting over the posterior pillar, and this was reported to be adeno-sarcoma. Since then, although the tonsil has remained indurated, it has not increased in size, and if I saw it now for the first time I might hesitate to diagnosticate a malignant growth. But as several competent pathologists fully agree as to its malignant character I do not now hesitate to recommend a radical operation. The induration and enlargement of the tonsil have not been affected by the internal administration of iodide of potassium, so that syphilis can be ruled out.

Dr. Wright: We were so interested in Dr. Delavan's last communication that we forgot to discuss the first one. I think that Dr. Delavan was very fortunate in his pathologist. Dr. Hodenpyl knows more about the pathology of the lymphoid tissue in the throat than any other pathologist in this country. It was his wide experience with this variety of cellular proliferation which led him to be so very cautious. The trouble with the pathologists frequently is not that there is any very great difficulty in making a distinction between benign and malignant round-celled growths, but that they have no opportunity of examining the whole growth, when, with a great deal of care, they would usually make the proper diagnosis. The trouble is that they are required to make a diagnosis from small pieces. Since the difficulty of recognizing the character of the growth under the circumstances is so great, I think that the clinical history, especially in these cases, should be very fully given to the pathologist when the fragment is sent to him for examination. A very little knowledge of the clinical history often makes a great difference. It is not fair to the pathologist in any case to give him only a little piece of tissue, without any clinical data, from which to make a diagnosis. I know that it is considered a good "grind" to give a pathologist a little piece of tissue from a growth without any clinical history and ask him to make a diagnosis, but it is not the scientific spirit. The more help given by the clinician to the pathologist, the freer from error his work will be.

Dr. DELAVAN: The history which I reported illustrates the value of giving iodide of potassium in all doubtful cases of this kind, and also the importance of sending as large a portion of the growth as possible to the pathologist; and, as stated by Dr. Wright, of giving him as complete a clinical history as possible. This was done in my case, and Dr. Hodenpyl gave his decision against operation, in spite of the fact that the diagnosis of sarcoma had been made by several expert authorities, and that operation had been strongly advised. But for his report the patient would have been operated upon. The effect of the administration of the iodide of potassium speedily supported his opinion.

With regard to the mucous membrane of the nose and operations upon it, I have seen children and adults injured for life by the indiscriminate removal of mucous membrane. By the use of this little knife, destruction of the mucous membrane is done away with. It causes the smallest amount of injury of any possible operation. Where the patient is hyperæsthetic and afraid of being hurt, the knife can be wrapped with cotton except near the point, the patient hardly being able to distinguish it from a probe, and allowing its use without objection. I hope that this plan of treatment will be tried in some of these difficult cases and that its actual value may be fairly tested.

A Case of Subglottic Fibroma; Removal by Tracheotomy and Curetting.—Dr. JOHN W. FARLOW, of Boston, read a paper thus entitled. (See page 794.)

Dr. DELAVAN: In addition to the interest of the case reported by Dr. Farlow I am impressed with the ingenuity and artistic excellence of the illustrative chart which he has presented with it.

Dr. FARLOW: I hoped that some member of the association would give me some clew as to whether the growth will come back again or not. The wound is cicatrizing very well. It is possible that the growth may reproduce itself, but I would prefer that it should take some other direction than into the trachea. There is still a good deal of tumor left, and it is probable that in time it may give trouble.

Dr. RICE: Was the growth very vascular?

Dr. FARLOW: No, it was not a vascular growth; it felt very much like fibrocartilage. There was very little hæmorrhage during the operation.

(*To be continued.*)

Book Notices.

Essentials of Obstetrics. By CHARLES JEWETT, A. M., M. D., Sc. D., Professor of Obstetrics in the Long Island College Hospital, and Obstetrician to the Hospital, assisted by HAROLD F. JEWETT, M. D. Illustrated by Eighty Woodcuts and Three Colored Plates. New York and Philadelphia: Lea Brothers and Company, 1897. Pp. viii–13 to 358. [Price, $2.25.]

A CAREFUL reading of this volume, which is nothing less than would be indicated, in view of the author's eminent standing as an obstetrician, shows that the title of the book is no misnomer, and, though the author modestly says it is intended for students and aims only to lay the foundation in obstetrical science, we feel certain that if its teachings are followed only safe and desirable consequences will result. It has much less verbiage than many a more pretentious book, and it is difficult to see how that which is really essential in obstetrics could have been more felicitously or concisely stated. There are but eight chapters in it, but they are entirely comprehensive of the subject. One scarcely knows how best to approve without flattery. In the anatomy of the pelvis and the physiology of pregnancy and labor there have always been certain points which have been obscurely demonstrated in the standard works upon obstetrics. Doubtless they were not altogether clear in the writers' minds, and without clear thought how can there be clear expression?

The elucidation of these subjects in the work under consideration may be entitled satisfactory and it indicates, if nothing else, the author's mastery of the subject. The pathology of pregnancy and parturition is, for the most part, easier to deal with, and it is treated by the author with terseness and lucidity. It is a highly commendable exercise in the use of language that the author has been able to compress and compass so large a subject within the limits of such a volume.

Ringworm and Alopecia Areata. Their Pathology, Diagnosis, and Treatment. By H. ALDERSMITH M. B. Lond., F. R. C. S., Medical Officer, Christ's Hospital, London. Fourth Edition. Enlarged and Rewritten, with New Illustrations. London: H. K. Lewis, 1897. Pp. xvi–327.

THE popularity and completeness of this book are attested by the fact that, from an original edition of only 81 pages, it has attained the size of 327 pages, and is already in its fourth edition. In its present form, it is the most complete work on the subject in the English language, and fully represents our knowledge of ringworm at the present time. Writing as the author of this book has written, for the practising physician, he has naturally devoted more space to treatment than to pathology. Nevertheless, the latter has been brought down to date, and the handling of it includes an excellent account of the different varieties of tinea, which, as the author truly states, "are as distinct from each other as favus is from ringworm."

It is to the diagnosis and treatment, however, that the author has mainly devoted his energies, and on that account the book will be welcome to the general practitioner. In regard to diagnosis, one remark is made on page 67 which should not pass unnoticed: "It is a great mistake to think that ringworm of the scalp usually presents itself to the medical practitioner as a red, scaly spot, with raised edge, and of a decided ringlike form, almost destitute of hairs. The appearance of ordinary ringworm of the skin (except in very young children, and at times with the *Megalosporon ectothrix* form) is very rarely seen on the scalp."

The description given of the various methods of treatment employed at the present time is very complete, and includes an estimate, based upon the author's own experience, of the value and efficacy of different plans described. It is interesting to note that the author, while stating fully the views of Sabouraud in regard to the pathology of alopecia areata, is vigorously opposed to them and maintains that the disease is nonparasitic in origin.

Scattered throughout the book are excellent formulæ, with complete directions for their use, and we can not see how this work can fail to be of benefit to any physician who is liable to be called upon to treat ringworm or alopecia areata.

A Text-book of Diseases of Women. By Charles B. Penrose, M. D., Ph. D., Professor of Gynæcology in the University of Pennsylvania, etc. Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. 11 to 529. [Price, $3.50.]

The author tells us in his preface that his book has been prepared for students, and that it is based almost entirely upon his personal experience. This is frank and fair, but the subject of gynæcology has become too large to be measured by any one man's experience, and it is a difficult matter, as the text shows, to select only such material as would be suited to the comprehension of beginners alone.

The author's style, especially in the early chapters, is not commendable, being deficient both in accuracy of statement and in finish.

The discussion of vaginal and perineal injuries, certainly in a work for beginners, seems to us too technical and prolix; indeed, it would seem as if, in the light of the more important lesions which are considered by the gynæcologist, the injuries of the perinæum and cervix had received from writers in general an amount of attention out of proportion to their importance. But that is probably explained by the fact that the treatment of these injuries was worked out while the science of gynæcology was yet young and undeveloped.

The second half of the book is better from every point of view, in our judgment, than the first. The teaching in regard to the major lesions of the pelvis and abdomen is sound and carefully expressed; the illustrations, so important in a work of this character, are good. The author's statements in regard to surgical technics leave little to be desired. The defects in the book are certainly minor ones and are not referred to with any intention of detracting from the well-known and enviable position which the author sustains among his colleagues.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part XII. Pp. 269 to 302. [Price, $3 each part.]

A Text-book of Practical Therapeutics, with Special Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Sixth Edition, enlarged, thoroughly revised, and largely rewritten. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. 9 to 758. [Price, $3.75.]

A Handbook of Therapeutics. By Sydney Ringer, M. D., F. R. S., Holme Professor of Clinical Medicine, University College, etc., and Harrington Sainsbury, M. D., F. R. C. P., Physician to the Royal Free Hospital, and the City of London Hospital for Diseases of the Chest, Victoria Park. Thirteenth Edition. New York: William Wood and Company, 1897. Pp. xi–746.

Surgical Pathology and Principles. By J. Jackson Clarke, M. B. (Lond.), F. R. C. P., Assistant Surgeon at the Northwest London and City Orthopædic Hospitals, etc. With One Hundred and Ninety-four Illustrations. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xviii–440. [Price, $3.]

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., Professor of Hygiène, and Director of the Laboratory of Hygiene, University of Pennsylvania. Fourth Edition, enlarged and thoroughly revised. With One Hundred and Six Illustrations, of which Nineteen are Colored. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–13 to 543. [Price, $2.75.]

Mastoid Abscesses and their Treatment. By A. Broca, M. D., Chirurgien des hôpitaux de Paris, etc., and F. Lubet-Barbon, M. D., Ancien interne des hôpitaux de Paris. Translated and edited from the French by Henry J. Curtis, B. S., M. D. Lond., F. R. C. S. Eng., Assistant to the Professor of Pathology, University College, etc. With Eleven Colored Illustrations. London: H. K. Lewis, 1897. Pp. x–268. [Price, 6*d.*]

A Text-book of General Botany. By Carlton C. Curtis, A. M., Ph. D., Tutor in Botany in Columbia University. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. viii–359.

Vade Mecum of Ophthalmological Therapeutics. By Dr. Landolt and Dr. Gygax. Philadelphia: J. B. Lippincott Company, 1898. Pp. v–138. [Price, $1.]

Archives of the Röntgen Ray (formerly Archives of Skiagraphy). Edited by W. S. Hedley, M. D., M. R. C. S., in Charge of the Electro-therapeutic Department, London Hospital, and Sydney Rowland, M. A., M. R. C. S., etc. Vol. II, No. 1. London: The Rebman Publishing Company, Limited, 1897. Pp. 3 to 20. [Price, $1 each part.]

Transactions of the Colorado State Medical Society. Twenty-seventh Annual Convention, Denver, June, 1897.

Royal Institution of Great Britain. Immunization against Serpents' Venom, and the Treatment of Snakebite with Antivenene. An Address delivered by Professor Fraser, M. D., LL. D., F. R. S., March 20, 1896.

The Antivenomous Properties of the Bile of Serpents and other Animals, and an Explanation of the Insusceptibility of Animals to the Poisonous Action of Venom Introduced into the Stomach. By Thomas R. Fraser, M. D., of Edinburgh. [Reprinted from the *Proceedings of the Royal Society of Edinburgh.*]

The Exact Treatment of Malarial Fevers. By Charles D. Slagle, M. D., of Portsmouth, Ohio. [Reprinted from the *Therapeutic Gazette.*]

A Study of the Blood in Tuberculosis. By A. Mansfield Holmes, M. D., of Denver. [Reprinted from the *Journal of the American Medical Association.*]

The New York University. The Chancellor's Report. 1897.

The Diagnosis of Tuberculosis from the Morphology of the Blood. An Original Research, with a Report of Cases. By A. Mansfield Holmes, M. D. [Reprinted from the *Medical Record.*]

The Technique of Blood Study and Experiments in the Physiological Chemistry of Leucocytes. By A. Mansfield Holmes, M. D. [Reprinted from the *Medical Record.*]

Ueber die Behandlung der venerischen Geschwüre mit Itrol (Argentum citricum purissimum). Von Dr. med. O. Werler. [Separat-Abdruck aus *Dermatologische Zeitschrift.*]

Ueber die Anwendung des citronensauren Silbers (Itrol) bei der Behandlung der Gonorrhöe. Von Dr. med O. Werler. [Separat-Abdruck aus *Dermatologische Zeitschrift.*]

Miscellany.

The Case of Searle vs. Gurdon.—This is the subject of an editorial which appeared in the *Intercolonial Medical Journal of Australasia* for September 20th, in which the writer, thinking it would be of considerable interest to the profession, gives a brief summary of the facts as follows: The plaintiff Searle asked Dr. Gurdon, who is in practice in Brighton, to attend his wife. Dr. Gurdon found that Mrs. Searle was suffering from pelvic trouble which, in his opinion, required operative treatment. Dr. Balls-Headley, who was called in consultation, confirmed this opinion, and performed abdominal section. The after-treatment was conducted by Dr. Gurdon. The patient convalesced satisfactorily after the operation, but did not recover perfectly. Dr. Gurdon told the Searles that if, after some time, she was not perfectly well, it might be necessary to curette the uterus, and that, if it was, he would perform this operation himself without special fee. She appeared to progress satisfactorily, however, and went to another colony on a visit, and with Dr. Gurdon's approval. On her return, the Searles went to live in another district, and Dr. Gurdon ceased attendance. His account had not been settled, though a fee had been paid for the operation. He was then sent for to see Mrs. Searle for some temporary ailment, but was unable to go, and advised them to call in the nearest medical man. They accordingly called in Dr. Weigall. Some time after, Searle called upon Dr. Gurdon and asked him to attend Mrs. Searle and curette her, as he had agreed to do, without fee. Dr. Gurdon declined, stating that he did not think it a proper proceeding. Searle then said Dr. Weigall thought it necessary. Some communications then passed between Dr. Gurdon and Dr. Weigall, the former warning Dr. Weigall to be careful in his relations with the Searles, and declining to have anything more to do with them, Dr. Weigall urging Dr. Gurdon to curette, as the operation was necessary. Finally, Dr. Weigall operated; the Searles then requested Dr. Gurdon to pay the expenses thus incurred. Dr. Gurdon refused, the Searles brought the action in question for £500 damages, and Dr. Gurdon brought a counter-action to recover his fees. The case lasted several days, and finally the jury awarded the Searles a farthing damages in the first case, and gave a verdict for them in the second case of counter-claim. The judge refused to allow costs, as he interpreted the verdict to mean that the jury awarded contemptuous damages, and regarded the action as one that ought not to have been brought. The jury also added a most inconsequential and irrelevant rider, to the effect that medical etiquette was detrimental to the interests of patients, and that the moral responsibilities of surgeons performing operations were not sufficiently evident.

Such, continues the writer, are the bare facts, upon which every member of the profession will probably make his own comments. The case well illustrates, he thinks, the risks medical men run in their daily practice, and the necessity of supporting medical defense associations.

It is not to be assumed, he goes on to say, for a moment that Dr. Weigall acted unprofessionally, but he certainly allowed himself to be placed in a very awkward position, and his conduct appears to be open to adverse criticism. Seeing that a difference of opinion existed as to the expediency of an operation, it would have been wiser to obtain a specialist's opinion before operating himself, especially under the peculiar circumstances. On the other hand, it may be said that Dr. Gurdon should have seen the patient with Dr. Weigall and ascertained her condition at the time, before deciding that no operation was necessary, and had he done so, probably the case would not have come to the court.

Another moral to be drawn from this case, the author thinks, is the unwisdom of making contracts with patients. No doubt, he says, patients want to have some idea of what the total expenses of a case will be, and an approximate estimate can often be given. It is always better, however, to state the fees for operation, anæsthetization, and assistance separately, and to charge for after-attendance independently, and the scale of fees adopted in various places provides for this, he adds.

The final result of this case, so far as Dr. Gurdon is concerned, says the writer, is that, while he has gained a moral victory, he has done so at great personal loss. The writer states that a meeting of the profession was to be held to sympathize with Dr. Gurdon. It is to be hoped, he remarks, it will be largely attended, and that those present will show that professional sympathy is not a mere sentiment, and that a practitioner who acts conscientiously, and in the interests of the profession, in refusing to allow patients to dictate to him what he should do, or to be coerced into doing what he does not think right, will not be allowed to suffer pecuniary loss in consequence.

Intubation after Tracheotomy in a Case of Diphtheria.—The *Intercolonial Medical Journal of Australasia* for October 20th publishes an account of a case which came under the observation of Mr. W. J. Long, of Victoria. The patient, a child two years of age, was admitted into the hospital on October 23d. It had been sick for two days and one of the physicians advised operating immediately. The child was extremely cyanotic and anxious, and was covered with a clammy perspiration; it was "pitching heavily," but there was no membrane to be seen, only hyperæmia. Tracheotomy was at once performed, without the use of chloroform, and the child made no resistance. Some membrane and much mucus came from the trachea. The contents of one bottle of dry antitoxine scales were injected. The child was placed in a steam tent, and an alkaline spray was used for the trachea. In the evening the child was much improved; the temperature was 100° F., the pulse 140, and respiration 48. It had slept and taken nourishment well during the day. The color was good, and much mucus came away. The contents of another bottle of antitoxine were injected. On October 24th more antitoxine was injected. On the 25th an attack of suffocation occurred, and a plug consisting of a large piece of membrane was coughed up. The patient was not so well. On the 28th some milk came from the tube while the child was being fed.

On November 6th some milk again came from the wound, and the patient was pale, anxious, and failing in weight and strength. The child could not breathe unless the tube was in position, and could not breathe at all through the mouth. It slept fairly well, and perspired freely during sleep. There were patches of bronchopneumonia over both lungs posteriorly. A stimulant expectorant was given.

On the 16th the child was still very pale, anxious, and much emaciated. The pneumonia was disappearing slowly, and the night sweats were profuse. The patient was unable to make a sound, and granulations were growing around the tube; some were removed, but the patient remained the same.

On the 20th the author attempted to pass an intubation tube, and did not succeed; but he succeeded at once with a tube of another size. The improvement was apparent immediately, and the tracheotomy tube was removed. The other tube was left in for two hours, during which time the child slept, and then it was coughed up. The author tried to introduce it again, but the child screamed, and, as this was the first time in a month that it had been able to use the larynx, he thought it unnecessary to persist in the attempt.

Improvement was rapid and permanent. In two weeks the child was taken home able to talk quite well. It rapidly gained in weight and strength, and the wound was quite healed.

Professor Virchow's Jubilee.—To the *Lancet* for November 20th that journal's Berlin correspondent writes that the fiftieth anniversary of Professor Virchow's joining the teaching staff of the Berlin University was celebrated on November 6th. He says that, owing to Professor Virchow's infirm state of health, the jubilee proceedings were of a more private character than would otherwise have been the case, being limited to addresses of congratulation delivered by the rector of the university and the dean and professors of the medical faculty. The rector, Professor Schmoller, referred to Professor Virchow's achievements not only as a physician and a pathologist, but also as a biologist and as a savant whose methods of research had influenced every branch of human knowledge. The dean, Professor Heubner, eulogized him as a *Privat Docent* of an altogether superior order—a teacher not only of students but also of professors. At an age when young men were, as a rule, far from having mastered what had been already discovered he had succeeded in solving the most difficult problems of biology. Professor Virchow in his reply, the writer continues, pointed out that he was happy in the knowledge that a body of men now existed in German universities strong enough not only to maintain the principles laid down by him but also to continue the work in the light of modern developments, and that he felt his work was done and he was now entitled to retire from his academical position, especially after having succeeded in obtaining a promise from the government that a new and modern pathological institute and museum would be constructed after his designs. A great number of telegrams, letters, and other marks of Professor Virchow's great popularity were received by him during the day.

The Albany Medical College Alumni Association of Greater New York held its third annual meeting on December 3d. Preparations were made for the annual banquet, to be given on January 20th at the Hotel Savoy, and officers were elected as follows: President, Dr. Horace Tracy Hanks; vice-president, Dr. John J. Van Rensselaer; secretary, Dr. Warren C. Spalding; assistant secretary, Dr. Edward F. Quinlan; treasurer, Dr. Henry F. C. Muller.

A General Method of preparing Opotherapic Medicaments.—A very suggestive experiment by M. Lanz, says M. Maurange in the *Gazette hebdomadaire de médecine et de chirurgie* for November 14th, shows that the danger of the majority of organic preparations consists much more in the extreme alterability of these products than in the toxicity of their active principles, which are not yet isolated. M. Lanz, experimenting on himself and on some of his friends, noticed that the English tablets of thyreoidin dried by the ordinary procedures gave rise to tachycardia when administered in doses of nine grains, whereas the absorption of from three hundred to four hundred and fifty grains of the fresh raw gland was not followed by any disturbance whatever. A direct bacterioscopical examination of pastilles, tablets, tabloids, capsules, palatinoids, etc., accounted for the cause of the symptoms of pseudo-thyreoidism experienced by the author, by revealing in these preparations bacteria, including even the septic vibrio, and also products of putrid decomposition, ptomaines, etc. So that the author was enabled to conclude from the whole study of the question that, until we were more fully informed, it would be necessary to resort exclusively to the fresh substance, in order to have positive results that would be comparable and constant, a condition which M. Maurange thought was very difficult to fulfill in practice.

Since 1896 the author has sought for a procedure which would enable him to employ the organic preparations with safety. Basing his investigations on Howitz's researches, which have shown that gastric digestion does not alter at all the properties of the products of the internal secretion of glands, he thought of peptonizing by the usual procedures the organs he desired to make use of. These experiments were undertaken principally with the thyreoid substance, the ovary, bone marrow, and the suprarenal capsules.

After this peptone has been obtained it can be kept indefinitely either in a syrupy condition with the addition of an equal quantity of glycerin and alcohol or in a dry state. Regarding its employment, the author gives it sometimes in wine, sometimes in sweetmeats containing fifty per cent. of sugar. The details of the preparation with wine are here given in full by the author.

To these peptones, he continues, he proposes to give the name of peptothyreoidin, peptovarin, peptomedullin, etc. He states that he has used them systematically in this way for fifteen months, having administered the thyreoid substance nine times, the ovarian sixteen times, the bony medulla seven times, and the suprarenal capsules twice. These medicaments, which are still very imperfect, and prepared only as they are needed, have been accepted without repugnance and perfectly tolerated, even by those who were confirmed dyspeptics. The author cites two cases of chlorosis in which the peptovarin, incorporated in gooseberry jelly, gave the best results, although the patients suffered from a very acute form of dyspepsia.

Other cases are cited by the author, who states that in all his observations he has seen no accidents, even when he administered the thyreoid substance in quantities of from fifteen to thirty grains a day. He thinks, on the whole, that the results have already been identical with those obtained from the employment of the fresh organ.

The Relative Efficiency of Various Anæsthetics.—In an editorial in the *British Medical Journal* for November 20th the writer remarks, referring to Dr. Augustus Waller's address on the relative advantages of ether and chloroform, recently delivered before the Section of Anatomy and Physiology at the annual meeting of the British Medical Association in Montreal, that Dr. Waller is convinced that the most satisfactory way of testing the efficiency of anæsthetics is to employ freshly prepared nerves, and to cause them to respond to electrical stimuli while subjected to various narcotizing vapors. Not only is he thus enabled to investigate the anæsthesia produced, but he is able to ascertain the strength of the vapor which kills the nerve and produces permanent immobilization. Under ordinary physiological conditions the galvanometer reveals the presence of currents in the nerves. The action of narcotics is to send the nerve to sleep, and the absence of the current is proof positive of this anæsthetic sleep. When the vapor is removed the nerve recovers itself, and again the nerve currents appear. The writer states that Dr. Waller, in testing a number of substances, found that, among those which produced anæsthesia and also brought about the death of the nerve, some were far more deadly than others.

We have hitherto been assured, says the writer, that chloroform either killed by paralyzing respiration through the nervous system, leaving the other tissues severely alone, or brought about death by circulatory failure, due perhaps to vasomotor dilatation, or by incapacitating the heart. Now we learn that not only does chloroform destroy muscular tissue and narcotize the nervous centres by its influence on the blood, but actually attacks nerve fibrillæ and destroys their irritability. Dr. Waller points out, says the writer, that it is a matter of indifference to a man whether he is killed in consequence of his heart failing or by asphyxia; what interests him most is how he can be saved pain with as little chance of losing his life as his surgeon can conveniently arrange. It is somewhat startling to find, the author thinks, from this point of view, that, dose for dose, chloroform is seven times as deadly as ether when tried upon the isolated nerve—that is, upon a highly specialized protoplasm—and these figures show how narrow a margin, in the case of chloroform, there is between a non-lethal dose and a lethal dose, while seven times that margin exists when ether is used.

Nitrous oxide, according to Dr. Waller, has little or no action on nerve tissue. Carbon dioxide, he finds, is a powerful agent to produce immobilization, and the presence of carbon dioxide favors anæsthesia and lessens its risk. This, the writer remarks, is a fact of extreme interest, because, unless it is carefully explained, it is liable to a fatal misunderstanding. The combination of chloroform and carbon dioxide is not, it must be distinctly understood, simply chloroform given with very little air. Dr. Waller, he adds, makes this distinction very plain.

In the statistics of deaths under these two anæsthetics ether stands better than in the proportion of seven to one. The proportion in its favor is about thirteen to one; but, as Dr. Waller pointed out, says the writer, the problem of the action of narcotics on the whole organism, although exemplified tersely by a nerve experiment, is in itself far more complex. It is often stated that the after-effects of ether are far more fatal than those due to chloroform; but no foundation in experiment or statistics exists to prove this, and, as Dr. Waller cogently puts it, the use of chloroform, if it is dangerous under all circumstances, is, unless under exceptional circumstances, unjustifiable; and if it is only dangerous when unskillfully given, deaths due to it amount to homicide.

The writer refers to the discussion, in which Professor Richet, Dr. Lawrie, Dr. Shore, Professor Gaskell, and Professor Stewart took part, and states that it turned mainly upon the oft-debated evidence afforded by cross-circulation experiments, as to whether or not the fall of blood pressure incident to chloroform narcosis is brought about through depression of the vasomotor centre or through weakening of the heart itself. How far such experiments can be accepted as conclusive, he remarks, remains to be seen in the face of so much evidence which has now been accumulated by the researches of MacWilliam, Hare and Thornton, Leonard Hill, and others; it is difficult to exclude the vasomotor centre as in some way causative of the fall of blood pressure under chloroform. The practical fact which stands out in terrible distinction is, he thinks, that deaths under chloroform have not lessened in spite of physiology or Hyderabad Commissions; and that it is useless to contend that these deaths arise because the physiologists teach dangerous tenets, since the large percentage of persons who give chloroform know little of and probably care less for physiology. It is rather the careless and the overconfident in whose hands such accidents happen, while, as a rule, it is safer in those of persons who have leisure and training to follow the trend of modern thought and teaching concerning anæsthetics.

The Case of Dr. Laporte.—In the *Journal des praticiens* for November 13th M. Huchard states that he has previously stated that he did not wish to honor, by publishing in his journal, the sentence which condemned Dr. Laporte to three months' imprisonment, but that many of its readers have pointed out that it would be preferable to publish the entire account in order that the document might be preserved. The following preamble is therefore published, and M. Huchard calls special attention to Nos. 4, 5, 9, 11, 12, 20, 22, 24, 25, 26, 27, 30, 33, 34, and 43:

1. Whereas, Laporte, who had obtained his diploma in 1893, and had vainly striven to create a private practice in a certain district, established himself on the 1st of September, 1897, in the boulevard de Charonne, No. 104;

2. Whereas, having been appointed in 1895 as a physician of the night service, he was summoned on the evening of September 11th to the rue Courat, No.

32, to attend a woman by the name of Fresquet, who had, for several hours, been in the pains of a labor which presented difficulties;

3. Whereas, Laporte being provided with a forceps—the only instrument he possessed with which to perform obstetrical operations—arrived at the house, where he found a midwife, Mademoiselle Maîtrepierre; and after an examination Dr. Laporte judged that the application of the forceps was necessary, a procedure which had been successful in two previous confinements of this woman, who had had five children;

4. Whereas, the physician's manner of procedure from the beginning surprised those present and inspired doubts as to his competence; and it was manifest to them that the handling of the forceps was not familiar to him; that he had no idea of the posture which the patient should assume; her legs had been allowed to extend the length of the bed; and the husband and the woman Houbert thought they ought to interfere in order to lift and hold the patient's legs while the operator applied his forceps; and the midwife could not refrain from saying, "We are getting into trouble";

5. Whereas, three applications of the forceps were made, but without any result; and the witnesses present at the confinement testified to the uneasiness and agitation of the prisoner, who, after the unsuccessful efforts with the forceps, said, several times, "I am at my wit's end";

6. Whereas, it was proposed to him that another physician should be called to help him; and he only replied, "Wait"; and he then said to the midwife, "There is nothing to do but to perforate the head of the child, which must be dead";

7. Whereas, after each one present had examined and ascertained that the heart beats of the child could no longer be felt, Laporte prepared to practise craniotomy, but he had none of the instruments ordinarily employed for this operation; so he tried at first to make use of the point of the forceps, but it was too short; he asked the husband for an instrument, and Fresquet brought the physician his tool-chest, from which Laporte took first certain implements which he could not make use of; and he then took a mattress needle, pointed at the end, flat and bent round, which he thought he might make use of;

8. Whereas, without rendering it aseptic or soaking it in boiling water, he introduced this needle into the vagina with one hand, and with the other he simply separated the labia and tried several times to puncture the child's head;

9. Whereas, having withdrawn the needle without ascertaining what had been the result of these punctures, Laporte then took from the tool-chest a cold chisel and a hammer, and, having applied the chisel to the head of the child, which, he said, had a hard skull, struck the chisel with the hammer; and at this moment Fresquet and the woman Houbert, who were angry and outraged, interfered and snatched the chisel and hammer from Laporte's hands;

10. Whereas, almost immediately the patient, coming from under the influence of the chloroform, made a movement, a contraction; the head of the child appeared at the vulva; and Fresquet called the physician's attention to this, and he applied the forceps and hastened to withdraw the body;

11. Whereas, the physician was disposed to leave without delivering the woman, but the midwife, fearing a hæmorrhage, obliged him to terminate the operation;

12. Whereas, soon after, having given some directions regarding the care of the patient, he left and did not return;

13. Whereas, the woman Fresquet very soon presented symptoms of a grave disease consecutive to confinement; and on the following day she was seen by Dr. Ballouhey, who judged her condition to be so serious that it was decided to take her immediately to the hospital, and she died on the 14th of September at eight o'clock in the morning;

14. Whereas, the autopsy of the child revealed in the right parietal region a wound and a perforation which had allowed a small quantity of cerebral substance to escape;

15. Whereas, on the other hand, the autopsy of the patient had led the examining physician to the following conclusions: "That the death of the woman Fresquet had been the result of a peritonitis localized in the right iliac fossa, consecutive to a double perforation of the bladder; that this double perforation had been made with a sharp instrument, such as the needle under seal";

16. Whereas, the expert added that the different lesions had been recognized by the prisoner during the course of the autopsy, at which he had been present;

17. Whereas, these conclusions were confirmed by Dr. Maygrier, an appointed expert, who had seen the anatomical specimens, and he agreed with his colleagues by declaring that the double perforation of the bladder had been the result of a puncture made by a pointed instrument, like the needle in question, which had passed through the bladder and reached the peritonæum, causing afterward a fatal peritonitis;

18. Whereas, it is true, M. Pinard contested these statements and conclusions before the court, saying he considered the perforations of the bladder as probably having been produced spontaneously owing to the long labor, and said that they might also have been caused by bony spicula;

19. But, whereas, the experts, in their verbal testimony, as well as in a subsequent account given to the court in order to justify and render accurate their opinion, declared that a careful examination of the organs of the patient did not enable them to consider the perforations found as spontaneous ruptures; and it was, furthermore, impossible that the lesions of the bladder, at the place where they had been found, had been caused by bony spicula, which, moreover, said Dr. Socquet, had not existed in the pelvis;

20. Whereas, the court placed between the statements made regarding the organs in question and the conclusions deduced therefrom, on the one hand, and, on the other hand, an argument based on hypotheses, conjectures, and theoretical reasons, could not hesitate to accept the former, coming from a distinguished and experienced professional man;

21. Whereas, in accordance with the court's view that the perforations of the bladder had been made by the needle which Dr. Laporte had made use of, it was necessary to inquire, in fact and in law, if the procedures and the operations of the prisoner, who had caused this lesion which had resulted in death, rendered him liable to the provisions of Article 319 of the Penal Code;

22. Whereas, in law, the general terms of this article applied to all persons, whatever their art or profession, consequently they applied to the physician and to the operator who, in the performance of his function,

became guilty of negligence and grave errors; and it was certain that the courts should use the power which the law conferred upon them with prudence; and the value of opinions, of theories, and of systems might not be appreciated by them; and they could not become judges of diagnosis, of the expediency of an operation, of the degree of dexterity with which it was performed, of the value of one procedure as compared to another, of the advantage of different medications; but their action began and was exercised where there had been on the part of the physician lack of intelligence, negligence, trifling, unskillfulness, or ignorance of things that all medical men should necessarily know, and such was the rule laid down by Attorney-General Dupin in his address, a part of which had been read to the court;

23. Whereas, the court should try to ascertain if acts of this nature were to be imputed to Dr. Laporte during the confinement of the woman Fresquet;

24. Whereas, in fact, Laporte, although he had introduced himself to the inhabitants of the boulevard Charonne as an obstetrician, he had no practical knowledge of the subject; and, aside from operations of this nature which he had been able to perform at the hospital when he was a student, he had operated only twice since the year 1893 in confinement cases; and in these the application of the forceps had not been necessary;

25. Whereas, on the other hand, he had never performed craniotomy; and his practice of obstetrical operations had amounted to hardly anything;

26. Whereas, his inexperience, moreover, had betrayed him to all, especially to the midwife, from the time he had arrived at the patient's house; and, besides the administration of the chloroform, which evidently had not been carefully watched, the manner in which Laporte had used the forceps and the posture in which he had allowed the patient to remain had revealed to them that he had no idea what a physician should know and do in such circumstances;

27. Whereas, the awkwardness of Laporte's actions, his incoherence, and his excitement had been such that the midwife at one time had asked him if he was suffering; and after the unsuccessful application of the forceps he should have recognized that he was "at his wit's end";

28. Whereas, under these conditions, finding himself in the presence of a grave operation which he had never performed, craniotomy, the instruments for this not being at hand, he should have sent for another physician, as those present had advised him to do; and in not doing this he had committed a grave error which might render him liable to the penalty of the law;

29. Whereas, furthermore, in practising craniotomy he had given evidence of unskillfulness and of a manifest ignorance of things which all medical men should know;

30. Whereas, in fact, it was one of the first principles, and taught in all treatises on the subject, that the surgeon who performed this operation with an appropriate instrument should introduce his left hand into the vagina, so that the fingers should grasp the fœtal head, which was to be held as steadily as possible by the hand of an assistant placed on the abdomen, and that the perforator, held in the right hand of the operator, should be guided to the place where it was to be used and supported by the index and middle fingers of the left hand; and in case the child's head was near the vulva, the physician might dispense with introducing the hand, but, at least, the two fingers, the index and the middle fingers, should lead and direct the instrument;

31. Whereas, this method of procedure, which was practised by all obstetricians, was employed not only to insure the success of the perforation, but also to protect the organs of the woman from laceration or rupture, which a false movement of the instrument would almost inevitably lead to;

32. Whereas, these rules, laid down and observed in operations done with appropriate instruments, were still more imperative when the physician had, as Laporte had, an instrument, which, according to the experts, was certainly defective and difficult to handle and direct with safety, because of its slenderness and its tendency to slip;

33. Whereas, the inquiry and the discussions elicited clear and formal statements that nothing suspicious could be attached to the women Houbert and Delanoé, who had been with the patient, and made formal declarations that when Laporte introduced the needle he did not direct it with his hand or with his fingers;

34. Whereas, Mademoiselle Maîtrepierre said, it was true, in regard to the needle: "It seemed to me that he introduced a finger, but I could not affirm it," but she explained that, standing behind the patient, whose head she was holding in her arms, she had not been able to see what was going on in front of her;

35. Whereas, even admitting this statement, which had been expressed to the court in the most hesitating manner, and could not, therefore, invalidate the formal declarations of the women Houbert and Delanoé, Dr. Laporte should not have introduced only one finger in order to guide the needle, for that would be manifestly insufficient and ineffectual in preventing it from slipping to the right or to the left on the organs of the patient;

36. Whereas, in addition, Dr. Laporte's statements at the examination constituted, on this point, an admission of his error; and, in fact, when confronted with the midwife, he had declared: "I think it was with the needle that I perforated the head, but I did not put in my finger to ascertain it. I remember that at one time I went a little too far with the needle, but I never stated that I had gone as far as the autopsy demonstrated";

37. Whereas, Laporte admitted also not having guided or directed the needle, since he did not ascertain how far it had gone or if it had perforated the child's head;

38. Whereas, M. Pinard was of the opinion that the prisoner must have guided the needle, because, if he had not, the autopsy would have revealed injuries in the vaginal *cul-de-sac*, whereas it had been shown that the vagina was intact;

39. Whereas, M. Maygrier had replied that he could not make such a positive affirmation as M. Pinard's; and it was necessary, moreover, to consider that Laporte, according to the witnesses, had opened the vulva with the fingers of his left hand, while he introduced the instrument with the right hand, and thus might have directed it as far as the organ in question without injuring it;

40. Whereas, it was shown to the court that the prisoner had thus violated the elementary rules of the profession, and that he had committed an imprudence and a negligence in operating, which constituted a

grave error that had been the direct and unintentional cause of the death of the woman Fresquet;

41. Whereas, although it did not involve a penalty, the present judgment could not fail to be that his inconsiderate and cruel use of the chisel and hammer was a new proof of his incompetence and lack of judgment;

Concerning the application of the penalty:

42. Whereas, it was necessary to take into consideration that the prisoner had lived an honorable life, the difficulties attending the beginning of his career, the impossibility of acquiring experience in his profession, owing to the lack of private practice, his condition of mind, his agitation, and also his emotion when, in the presence of the complications which arose, he felt baffled, but nevertheless obliged to remain near the patient and to assist her until delivery, from a sense of duty and humanity;

43. Whereas, these considerations were of a nature to win the indulgence of the court in behalf of the prisoner;

On these grounds the accused was sentenced to three months' imprisonment, and, according to the first article of the law of the 26th of March, 1891, it was decreed that sentence should be suspended.

The Choice of Diuretics in Different Forms of Renal Dropsy.—The choice of diuretics, says M. Liégeois in the *Journal des praticiens* for November 13th, in the various forms of dropsy connected with acute diffuse nephritis, varies according to whether they are independent of or accompanied by cardio-asystolic troubles.

In the beginning of dropsy in acute diffuse nephritis, whether it follows cold or whether it develops two weeks or a month after scarlatina, the heart does not intervene in the pathogeny of the infiltration; its size is normal, and it performs its functions normally, and it would be useless to institute digitalis treatment, for example, as a means of curing the dropsy, for it would not undergo the least improvement from it. At this extremely acute period the diuretics of choice, the author thinks, are milk, tannin, and gallic acid. In the particular case of acute nephritis with anasarca, in which the urine is scanty, high-colored, and sometimes of a brownish or bloody tint, diuresis will occur after the third or fourth day of the administration of tannin or gallic acid, gradually increased in quantity, approaching, but not exceeding, the physiological figure. Tannin, in daily doses of from fifteen to thirty grains, causes this diuretic result, not, as Duboué thought, by renewing the epithelium of the tubuli contorti, not by restoring a new epithelium which re-establishes the osmotic functions that have been for a long time more or less impaired, but simply, on the one hand—owing to the astringent action which it exercises on the smooth muscular fibres of the glomerular coils and the small arteries of the kidneys—by relieving the congestion of the interstitial and parenchymatous tissues of this organ, through which it is carried by the blood; on the other hand, owing to insoluble combinations which it forms with the mucoso-proteic substances exposed on the surface of the diseased renal epithelium, by drying the soil which it touches. After a week, when the interstitial and parenchymatous inflammation of the kidneys has passed from the acute stage to the subacute, when the fever has greatly abated or fallen, the author prescribes, at the same time with the tannin or the gallic acid, a nervo-secretory diuretic which, he says, has invariably given him good results in the anasarca of scarlatinous nephritis, and twice in the anasarca of nephritis *a frigore.* This diuretic is theobromine. For children of from two to five years, the dose is from eight to twenty-three grains a day; from six to ten years, from twenty-three to thirty grains, in capsules containing from four to eight grains, every two hours. In this way from four to five pints of urine daily may be obtained in two, three, four, or five days, and the anasarca visibly decreases.

If this double medication—with tannin and theobromine—does not give the hoped-for success, the persistence of the œdema may be attributed to another cause, such as atony of the cardiac muscular fibre. The author cites an instance which came under his observation in 1875 in which the patient, a child seven years old, had an attack of scarlatina on the 14th of June. On the 1st of July the author distinctly observed symptoms of asystolic dilatation of the heart, and only about six ounces of albuminous urine was passed daily, which presented a smoky appearance and deposited red and white globules. The anasarca was generalized, and death occurred on the following day from pulmonary congestion and œdema. The kidneys were greatly congested; the cortical substance presented trails and reddish points corresponding to the glomeruli and to the blood-vessels before their entrance into Müller's capsule. The acute nephritis was both interstitial and epithelial, or intratubular; the elements of the connective tissue which separates the various vascular sinuosities of the glomeruli had rapidly become so proliferous that the heart had not had time to become sufficiently hypertrophied to overcome the partial obstruction of the 560,000 glomeruli of each kidney, and, being strained, had become dilated, as its feeble and accelerated sounds, with a small pulse, had shown on auscultation; percussion, also, had shown the increase of the extent of the precordial dullness, and the autopsy had revealed the marked dilatation of the right ventricle, the tissue of which was somewhat fatty.

It is evident, the author remarks, that in similar cases it may be affirmed that the œdema, primarily dyscratic, is complicated with cardiac œdema, œdema from dilatation of the strained heart consecutive to its struggle against the inflammatory constriction of the circulatory space in the glomeruli of the kidneys. At this period digitalis should be used as a diuretic in infusion and maceration. For children the daily amount is from three quarters of a grain to a grain and a half for three days only. If, however, there is hypertrophy, digitalis must not be employed. This hypertrophy, which is principally of the left side of the heart, and is due, also, to the struggle against the circumglomerular inflammatory lesions, manifesting itself, however, by pulse of high tension, absolutely contraindicates digitalis. The hypertrophy is of trifling account in the pathogeny of the anasarca; it has a tendency to disappear spontaneously in proportion as the renal lesions are effaced. When dropsy is coincident with it, it is preferable to employ theobromine, the diuretic action of which is exercised without the aid of the blood-vessels and of the heart. If these measures, says the author, are applied judiciously and in time, good results may be looked for; when they fail, which is only too common in the form *a frigore*, it is because the inflammatory lesion has passed to the chronic stage, constituting what is called the large smooth white kidney.

Lectures and Addresses.

DIABETIC COMA:

ITS ÆTIOLOGY, SYMPTOMS, AND TREATMENT.*

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Lecture III.

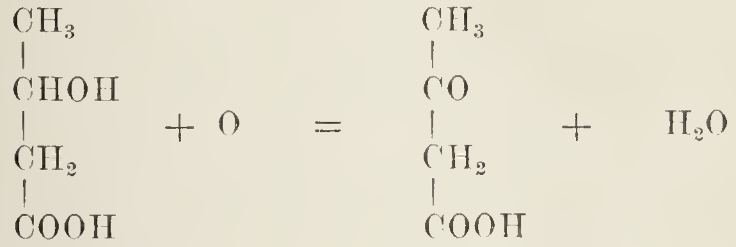
Time has amply verified the statement of Prout that diabetic patients constantly live on the brink of a precipice. He referred specially to the numerous complications to which diabetics are so prone, and which are the immediate causes of death in so many instances. The frequency of tuberculosis, pleurisy, and pneumonia in diabetes is generally recognized. While many cases terminate fatally from these complications, Prout's words are particularly applicable to a complication which had not been recognized at the time he wrote them, the most dreaded of all the complications of diabetes—viz., the coma so characteristic of this disease. All acute terminations of diabetes associated with loss of consciousness are not identical with true diabetic coma. Thus a comatose condition may occur in diabetes as a result of (1) cerebral apoplexy, (2) tuberculous meningitis, and (3) uræmic intoxication. Excluding these cases, we find that a large percentage of deaths is due to a form of coma presenting a group of symptoms fairly constant in all cases, and differing from the forms just referred to.

True diabetic coma was first accurately described by Kussmaul in 1874. Since then an enormous amount of literature on the subject has appeared dealing particularly with its ætiology. The frequency of this complication is illustrated by the statement of Stephen Mackenzie, that of the instances of fatal diabetes collected by him from the registers of the London Hospital, all under the age of twenty-five, with but one exception, had died of coma. Of four hundred cases of diabetes which came under Frerichs's observation two hundred and fifty terminated fatally, of which number coma was the cause of death in one hundred and fifty-one instances. There have been fifteen deaths out of the thirty-nine cases of diabetes treated in the medical wards of the Johns Hopkins Hospital, in twelve of which death was preceded by coma.

A number of conditions are believed to predispose to the development of this complication. Young persons, and particularly children, are more liable to be attacked than adults and persons beyond the middle period of life. Sex and habits of life are believed to we without influence. Great importance is attached by many writers to constipation as an ætiological factor. It is very common in acute cases, and the intestines are frequently found at autopsy to contain quantities of hard fæcal matter. Saundby ranks it very high among the predisposing causes, and believes it to act unfavorably in two ways: (1) By diminishing elimination of effete matter by one of its ordinary and most important channels, and (2) by affording time for the development of fermentation processes giving rise to the formation of toxic substances which may be absorbed into the blood. The importance of muscular fatigue as an exciting factor, especially in advanced cases of diabetes, was pointed out many years ago by Prout. The onset of coma in some instances may be traced to the effects of nervous shock and exposure to cold.

Many theories as to the exciting cause of diabetic coma have been advanced. At one time it was believed to be caused by an effusion of serum into the arachnoid, but subsequent observations failed to confirm this view. The theory that the symptoms were due to a retention of urea was subsequently overthrown by experiments showing that it is almost impossible to produce any marked nervous symptoms by the ingestion or injection of urea so long as diuresis is maintained, as is the case in diabetes. Frerichs later advanced the view that diabetic coma was due to an excessive amount of ammonia in the blood—that is, an ammonæmia. To this he was led by observing the presence of large quantities of ammonia in the urine previous to and during the coma. The ammonia was produced, as Frerichs believed, by the transformation of urea into ammonium carbonate by the action of an abnormal ferment in the blood. Further observations have not supported this theory.

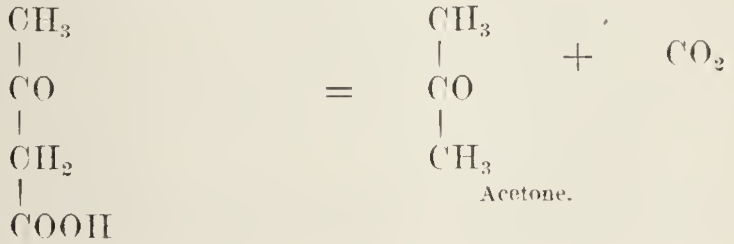
Diabetic coma has been attributed in succession to the presence of acetone, diacetic acid, and β-oxybutyric acid in the blood. These three substances are very closely related to one another, as is shown by their formulæ and reactions. From β-oxybutyric acid, diacetic acid is directly produced by oxidation, as shown in the following formula:



$$\begin{array}{c} CH_3 \\ | \\ CHOH \\ | \\ CH_2 \\ | \\ COOH \end{array} + O = \begin{array}{c} CH_3 \\ | \\ CO \\ | \\ CH_2 \\ | \\ COOH \end{array} + H_2O$$

β-oxybutyric acid. Diacetic acid.

Diacetic acid again is readily decomposed into acetone and carbon dioxide as follows:



$$\begin{array}{c} CH_3 \\ | \\ CO \\ | \\ CH_2 \\ | \\ COOH \end{array} = \begin{array}{c} CH_3 \\ | \\ CO \\ | \\ CH_3 \end{array} + CO_2$$

Diacetic acid. Acetone.

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* Delivered before the Post-graduate Class of the Johns Hopkins University, June 9, 1897.

In 1857, Petters, an assistant of the elder von Jaksch, detected in the urine of a fatal case of diabetes a substance which in its reactions with sulphuric acid and caustic alkalies resembled acetone. The alcoholic or fruity odor of the urine in certain cases of diabetes had been previously recognized. Under Lerch's direction it was further shown that a similar substance was contained in the blood of some patients. The identity of this substance with acetone was later proved by Kaulich and Tollens, and subsequently confirmed by Cantani and Fleischer. Petters and Kaulich believed that acetone was produced by some abnormal fermentation in the intestine, but Kussmaul showed that this could not be true. Von Jaksch, Jr., who made a careful study of the occurrence of acetone in the urine, concluded that it was present in minute traces in the urine of healthy individuals (a view not universally accepted), and Salkowski subsequently showed that any healthy urine when distilled with sulphuric acid yields a substance which gives all the reactions of acetone. The detection of acetone in the urine of patients suffering from diabetic coma at first led observers to believe that it was the cause of this complication, a view no longer held. Since it has been shown that acetone can be administered to animals in considerable quantities without producing toxic symptoms. Further, it has been found in the urine in quite a variety of other diseases, particularly in severe cachexias, as in that following carcinoma, and also in small-pox, typhus, pneumonia, scarlet fever, and measles, without giving rise to symptoms resembling those of diabetic coma. The most that can be said at present regarding the appearance of acetone in the urine is that it should at least put the physician on his guard, as its presence is very frequently followed by that of diacetic acid and β-oxybutyric acid, which are of much more serious import.

Gerhardt, in 1865, discovered a substance in certain diabetic urines which gave a Burgundy-red color on the addition of a solution of ferric chloride. He believed this reaction to be due to the presence of ethyl aceto-acetate, because the distillate of such urines yielded acetone, carbon dioxide, and certain amounts of alcohol. His conclusions were incorrect, however, as the alcohol was in all likelihood the result of the fermentation of sugar. Subsequently, in 1874, Rubstein demonstrated that the substance giving this Burgundy-red color was aceto-acetic or diacetic acid. This observation was later confirmed by von Jaksch and other observers. The close relationship between this acid and acetone is shown by the reaction already given, in which, by simple boiling, it is decomposed into acetone and carbon dioxide. This fact is of practical importance in testing for these two substances in diabetic urine. If Lieben's test with liquor potassæ and iodine and iodide-of-potassium solution is positive for acetone in a perfectly fresh specimen of diabetic urine, it is fairly safe to say that this substance was preformed in the urine and not due to a decomposition of the diacetic acid after it is voided. The more marked reaction for acetone obtained in distilled urine is often due to the splitting up of the diacetic acid, which is very unstable. This instability of the diacetic acid renders it necessary to test for it in perfectly fresh urine. Acetone itself does not give the Burgundy-red reaction with ferric chloride. Munson * states that he has found that diacetic acid gives the "diazo reaction" of Ehrlich, while acetone does not. It was for some time believed that diacetic acid was produced by the oxidation of sugar, and Minkowski endeavored to show that the intensity of the ferric-chloride reaction and the percentage of sugar in the urine ran parallel. Subsequent investigations proved conclusively that this was not the source of the diacetic acid. Von Jaksch believes that in the oxidation of sugar acetone is yielded, and that if present in large quantities it unites with some fatty acids, in all probability formic acid, to form diacetic acid. That the presence of sugar in the urine is not essential to the production of diacetic acid is shown by the fact that this substance has been repeatedly demonstrated in the urine of certain fevers, in carcinoma, and other diseases accompanied by marked tissue waste, without the urine containing sugar. It is a well-established fact that the nitrogen excretion in diabetes is much greater than can be accounted for by the nitrogen ingested in the food, the difference being made up by the nitrogen resulting from the decomposition of the albumin of the body. The view generally accepted now regarding the origin of diacetic acid and acetone is that they are products of albumin decomposition. Von Noorden and most observers hold that they originate only in the decomposition of the body albumin. Others claim that they arise in part also from the albumin taken in the food. In the majority of cases of diabetic coma diacetic acid is found in the urine previous to and during the attack. Von Jaksch and others have attributed the cause of this complication to its presence. Kussmaul and Frerichs, in experimenting on men and animals, showed that ten to twenty grammes of this acid could be given in health without the production of any grave toxic symptoms, thus demonstrating that in itself it possesses no poisonous properties. After the administration of the diacetic acid none appears in the urine, although the latter is found to contain considerable quantities of acetone.

In 1884, Stadelmann, Külz, and Minkowski, working independently, found that the urine of patients with diabetic coma contained considerable quantities of β-oxybutyric acid. Halleworden had previously shown that diabetic urine contained an enormous increase in the quantity of ammonia, and demonstrated that the amount of ammonia was an exact criterion of the acid output of the organism. It had been observed that pa-

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* *Journal of the American Medical Association*, May 1, 1897, p. 832.

tients who excreted large amounts of ammonia were especially liable to coma, and this led Stadelmann to advance the theory that diabetic coma is a self-intoxication due to an excess of acids within the body. β-oxybutyric acid is now believed by most observers to be the exciting cause of diabetic coma, and to possess far greater poisonous properties than acetone and diacetic acid, which have been shown to produce hardly any toxic symptoms whatever. Like acetone and diacetic acid, it results from the decomposition of the body albumin. It is probably, as many believe, the first stage in the formation of diacetic acid. The fact that the latter is easily decomposed into acetone and carbon dioxide shows how closely the three substances are related. The amount of β-oxybutyric acid eliminated daily may be enormous. Minkowski found in a fatal case not less than twenty grammes in twenty-four hours. Külz, on the other hand, found the twenty-four-hour amount in three cases to be sixty-seven, one hundred, and two hundred and twenty-six grammes. Its occurrence in diabetic urine is of the gravest importance; it is permanent, and shows a constant tendency to increase. I quote the following words from von Noorden: * "According to all our experience up to the present time, the symptom is of the gravest prognostic significance; in most cases, at the end of a few days or weeks, diabetic coma ensues and the case passes on to a fatal termination." With such large amounts of this acid produced it is not surprising to find that the alkalinity of the blood is markedly reduced in diabetic coma. β-oxybutyric acid, diacetic acid, and acetone have all been demonstrated in the blood of patients suffering from this complication. The blood and tissues of patients who have died of diabetic coma frequently have an acid reaction, as has been shown by the researches of Kühne and Minkowski.

Lépine, Kraus, and Rumpf have observed cases in which diabetic coma has existed without the urine containing either β-oxybutyric acid or diacetic acid. Kraus states that such cases are extremely rare, and as yet are unexplainable.

It is interesting to note that the complete exclusion of carbohydrates from the food of diabetics tends to increase the excretion of diacetic acid and acetone in the urine. It has been shown that in cases where these substances have been present in considerable quantities in the urine of patients on an exclusive nitrogenous diet they have greatly diminished, and in a recent case reported by Munson † they almost entirely disappeared on the addition of a certain amount of carbohydrates to the diet.

Minkowski has shown that extirpation of the pancreas is occasionally followed by the appearance of β-oxybutyric and diacetic acids in the urine. These were observed in five cases in all. In three of these five β-oxybutyric acid and in the other two diacetic acid was the first to appear.

The detection of β-oxybutyric acid in the urine is not very easy. Its presence is not to be expected, excepting in urine which also gives the diacetic-acid reaction. They are practically always found together. It is optically active, and rotates the rays of polarized light to the left—that is, in a direction opposite to that in which grape sugar rotates polarized rays. Its occurrence may be suspected when the percentage of sugar by Fehling's titration method is considerably greater than that given by the polariscope. If urine which has been thoroughly fermented and cleared with neutral lead acetate shows a more or less marked lævorotatory power, β-oxybutyric acid is present. It can be further identified by obtaining the crystals of α-crotonic acid from the distillate of urine which has been rendered strongly acid with H_2SO_4, according to the method of Külz.

Sanders and Hamilton advanced the view that diabetic coma was caused by fat emboli of the pulmonary and cerebral capillaries. Their theory is based on the post-mortem results obtained in one case of coma in which the blood was very fatty, and fat emboli were found in the lungs and kidneys.

According to our present knowledge it may be definitely stated that diabetic coma is due to an acid intoxication produced by the circulation of excessive quantities of β-oxybutyric and possibly also diacetic acid in the blood, these being the products of the decomposition of the body albumins.

As already stated, Kussmaul, in 1874, was the first to make a thorough study of the symptoms of diabetic coma.

The premonitory symptoms vary in different individuals. The attack sometimes begins with maniacal excitement. More commonly abdominal pain or headache is complained of. Lépine lays great stress on the rapidity of the pulse as an important prodromal sign.

Sometimes suddenly, occasionally after headache, insomnia, restlessness, anxiety, vertigo, and symptoms resembling alcoholic intoxication lasting for a few hours or days, the patient falls into a condition of somnolence, which rapidly or more slowly passes into deep coma. The patient now lies quietly in bed without any convulsive movements, or at most with only slight clonic twitchings. The pupils are dilated, the eyes are half open, or the lids are slowly raised or lowered. The pulse is small and slightly accelerated. The temperature may at first be elevated, but later sinks far below normal. The respirations are characteristic. There is a deep, long-drawn inspiration without stridor, followed by a short expiration. The number of respirations is normal or slightly increased. In spite of full aeration in the lungs, a slight, gradually increasing degree of cyanosis arises, due, apparently, to obstruction to the pe-

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* *Twentieth Century Practice of Medicine*, vol. ii, p. 95.

† *Journal of the American Medical Association*, May 15, 1897, p. 927.

ripheral circulation. The breath may have an alcoholic or fruity odor from the exhalation of acetone. In this condition the patient remains for from twenty to forty-eight hours, rarely longer. Then follows death, in the vast majority of cases preceded by a further depression of the temperature and by a gradual diminution in the number and depth of the respirations.

Coma may terminate any case, although obstinate cases with abundant sugar are more liable to the complication than those where the glycosuria yields easily to treatment.

Frerichs has classified the cases of coma into three groups:

1. Those in which the patients suddenly, and usually after previous exertion, become prostrated, with small, failing pulse, cold extremities, drowsiness, and loss of consciousness. These cases terminate fatally in a few hours, and Frerichs believed death was due to heart failure.

2. Those in which the duration is longer. There are preliminary gastric disturbances, such as nausea and vomiting, or some local affection, such as pharyngitis, phlegmon, or a pulmonary complication. In such cases the attack begins with headache, delirium, great distress, and dyspnœa, which affects both inspiration and expiration, a condition to which Kussmaul gave the name air hunger. Cyanosis may or may not be present. If it is, the pulse becomes rapid and weak, and the patient gradually sinks into coma, the attack lasting from one to five days. The odor of acetone may be detected in the patient's breath. Frerichs attributed this form of coma to some poison, possibly acetone, acting on the respiratory centre. It has, however, been definitely shown that acetone has no serious toxic effects when administered to the healthy human individual.

3. Those of patients without dyspnœa or anxiety, but with moderately firm pulses and fairly well nourished. The attack is characterized by headache, a feeling of intoxication, disordered gait, sleepiness, and gradual coma from which the patients can not be aroused. The breath possesses the typical acetone odor. These cases were believed by Frerichs to be the result of a poison acting on the nervous system in a manner similar to alcohol.

In the first group the symptoms are those of collapse, coma occurring only at the end, and the duration of the whole attack is very short. The second group comprises Kussmaul's typical complex of symptoms, with dyspnœa, peculiar odor of the breath, and coma. In the third group there is no dyspnœa, and the symptoms more closely resemble alcoholic intoxication.

The coma may last from twelve hours to four or five days. The longest time during which coma was present in our twelve cases was just seventy-two hours.

The prognosis is extremely grave. The cases nearly always terminate fatally. Quincke, Gamgee, and Reynolds have reported four cases in which recovery took place.

Prevention is better, is more applicable than cure in the coma of diabetes. The measures adopted should be mainly along the line of prophylaxis. All those avoidable conditions which are believed to be predisposing causes, such as constipation, muscular fatigue, nervous shock, and exposure to cold, should be guarded against.

Von Noorden says: "In many cases there is a prodromal period indicating the approach of coma. This time is to be employed in taking prophylactic measures, which seem often to be successful.

"(*a*) The form of nourishment must be varied in different ways according to the nature of the case. If the threatened patient has been taking carbohydrates in considerable quantities, they must be greatly reduced and replaced by added amounts of proteids and fat. On the other hand, if the patient has been abstaining strictly from carbohydrates it will be advisable to permit their use. The mere fact of a change seems to be more important than the direction in which this change is made.

"(*b*) Large amounts of alcohol given in divided doses through the day are necessary.

"(*c*) Constipation must be relieved by mild laxatives, but the use of drastic purgatives is to be condemned.

"(*d*) Acting on a theory which is doubtful yet worthy of attention (acid intoxication), large doses of alkalies have been recommended—for example, six or eight grammes of bicarbonate of sodium a day added to one or two bottles of Vichy or Neuenahr water."

In the use of medicinal remedies in the prodromal stage, the physician has two objects in view: First, to check fermentative processes by means of antiseptic and antizymotic drugs, on the theory that toxic substances are produced mainly by fermentative processes going on in the intestinal tract. For this purpose thymol was recommended by Foster, but apparently it has never been given a fair trial by the profession. Salicylate of sodium has also been used with the same object in view, but without preventing the onset of the coma. Secondly, to neutralize the acids circulating in the blood by the administration of alkalies or alkaline waters. These may be given either by the mouth or rectum.

When coma has actually set in, we are practically helpless with our present remedies. Kussmaul tried transfusion of blood with only temporary results. Oxygen inhalations were also without avail. Hilton Fagge and Taylor injected a weak solution of phosphate of sodium and sodium chloride into the veins, with benefit for some hours, but without any permanent results. Of the saline solutions that have been administered intravenously a three-per-cent. solution of sodium carbonate has probably been oftenest used. Chadbourne collected seventeen cases in which this method of treatment was adopted, and in only one was the result successful; temporary improvement was obtained in seven; and the most that can be said for the treatment is that it gives the patient a few hours of complete consciousness. Reynolds published two cases of recovery from diabetic coma after the administration of a dose of castor oil followed by thirty to sixty grains of citrate of potassium every hour in copious draughts of water. This method has apparently not been extensively tried. One of the commonest methods of treatment in present use is the subcutaneous and intravenous injection of quantities of normal saline solution at repeated intervals. The method is highly recommended by von Noorden, as it seems rational, having the effect of promoting diuresis, and washing out of the system any toxic substances which may be present. It is the method of treatment adopted in the medical wards here. It was used in ten of the twelve cases in which coma developed. In two cases the patients were restored to complete consciousness, so that they would have been quite capable of making a will. Both cases terminated fatally, however. In three instances there was improvement in the pulse, and the respirations were much less labored, though consciousness never returned. In the five remaining cases no appreciable improvement was noticed. The subcutaneous and intravenous injection of salt solution seems to have given the best results yet obtained in coma. Next to this method, injections of camphor and ether are advised by von Noorden, who states that they are at least indicated by one symptom, which is seldom absent in diabetic coma—namely, weakness of the heart.

THE ECONOMIC WORTH OF THE PHYSICIAN.*

By A. NOEL SMITH, M. D.,

DOVER, N. H.

WHILE contemplating a subject for to-day's address, an accusation often made against physicians kept ringing in my ears—viz., "Doctors are non-producers." I decided, therefore, to call your attention for a few moments to "the economic worth of the physician."

The physician of to-day does not require any defense. No excuse should be made for his existence. We do not hesitate to make the assertion, in the strongest language imaginable, that he is a living necessity, whether appreciated or not. He may be expected to be omniscient and omnipotent, but he neither knows everything nor can he do everything.

I was once asked by an old woman at the bedside of a patient to name the disease. I replied that I did not know what the trouble was. "What! you a doctor, and don't know!" was the rejoinder. I freely acknowledged my ignorance, and further added that physicians did not profess to know everything; but, having devoted years of time to the preparation for, and the practice of, their profession, they *did* profess to know more than those, like herself, who had not done this.

Not only is the physician unable to accomplish *everything*, but he can not be absolutely sure, in certain cases, that he has done *anything*. Given other cases and he finds himself upon surer footing. Thus, a hypodermic of morphine will ordinarily relieve the pain of colic and save the patient from hours of suffering.

Now, then, the physician must have a certain value in the community, which, broadly estimated, may be regarded as relative rather than fixed. He lives for others, as Pelopidas said public men should do. When he was departing for the army, his wife entreated him to take care of himself. "My dear," he answered, "private persons are to be advised to take care of themselves, but persons in a public character to take care of others."

Is the physician duly appreciated? No. People have no regard for his health, life, or comfort. He has no business to sleep, eat, or drink; to be tired or sick. He is accused of being a sort of parasite upon society, a non-producer, and nobody regards his feelings.

One physician says that he is bothered continually by patients asking him if he has read this or that book. "O doctor, you must read *Quo Vadis*. Why, haven't you ever read *The Bookbills of Narcissus?*" One old gentleman brought him a copy of *Talmudic Miscellany*, saying: "Pick it up at any time. You'll find it mighty entertaining reading. Last night I opened it at random, and I struck this passage: 'Most donkey drivers are wicked, but most sailors are pious. The best physicians are destined for hell.'" Thus, when they are through with abuse of use here, we are consigned to the infernal regions!

What is the doctor's mission? Evidently to prevent and relieve suffering and prolong life. What is the value of life? Estimates vary. Some of our State legislatures have decreed that a human life is worth five thousand dollars. In ancient Rome a simple citizen was valued at nine hundred pieces of gold; but when the Franks ruled, "the life of a Roman was of smaller value than that of a barbarian." There is no limit to the value one may put upon his own life. In face of the gallows, we find one man in English history consenting to pay seventy-five millions dollars for his liberation.

Before noting what the physician accomplishes in preventive and curative medicine, we will make a few observations on production in general.

Each community has its producers and consumers. Just so long as the latter fail to outnumber the former there is a certain degree of prosperity. And this prosperity, of course, is exactly in proportion to the excess of production over consumption.

There are certain requisites to production, and labor in some form is one of them. To be a producer, then, it is evident that one must become a laborer. It does not follow that every man must take up the pick and shovel and perform the hardest manual tasks in order to be eligible to enter the ranks of the laboring class. Quite a proportion of mankind toil as hard with the brain as certain other proportions do with the hand. Still, the fact remains that there is unproductive labor, or labor recognized as such, as well as productive. Just what shall be assigned to either class is a question concerning which political economists do not agree. There are extremists here as elsewhere.

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* The president's address delivered before the Strafford, N. H., District Medical Society, at its ninetieth annual meeting, October 13, 1897.

"Many writers have been unwilling to class any labor as productive, unless its result is palpable in some material object capable of being transferred from one person to another." *

Another class of writers would have all labor productive which results in anything useful.

"The labor of officers of government, of the army and navy, of physicians, lawyers, teachers, musicians, dancers, actors, domestic servants, etc., when they really accomplish what they are paid for, and are not more numerous than is required for its performance, ought not, say these writers, to be 'stigmatized' as unproductive." †

The world's idea of usefulness is largely comprehended in dollars and cents; so what will result in increased wealth is productive. Just in proportion as a person adds to the wealth of the world, be he a physician or otherwise, in so far is he a producer.

There are many ways in which labor may prove conducive to production. There is the so-called "extractive industry," applied to digging valuable materials from the earth; another industry where men are engaged in the manufacture of tools and instruments to be used as helps to productive labor; men who distribute the fruits of toil, and thus supplement the direct producers; and those who enable others to keep intact their productive powers. To this latter class, evidently, belong the physician and surgeon. For the colic patient, already alluded to, can not relish work while suffering, but, his pain banished, he immediately becomes a producer again.

Now, then, what has the physician accomplished for the world of economics? In a general way, much; in a special manner, more.

It is a great thing to save human life. Lincoln thought so when he said: "Some of our generals complain that I impair discipline and subordination in the army by my pardons and respites; but it makes me rested after a hard day's work if I can find some good excuse for saving a man's life, and I go to bed happy as I think how joyous the signing of my name will make him and his family and friends."

When we attack disease and pestilence we make war upon the greatest enemies of the human family. We might truly say that war slays its thousands, but disease its tens of thousands. Who can compute the saving in dollars and cents to the world from the work and sacrifices of the physician? As one aptly puts it: "No body of men are more deserving of consideration by the State than are physicians. The economic value of the physician's voluntary and charitable services to his State is well-nigh incalculable. The human lives saved and perpetuated through the humane efforts and free services of this class of citizens can not be estimated alone in dollars and cents, yet by these standards they would approach millions every year." How true this is!

F. W. Reilly, M. D., assistant commissioner of health of the city of Chicago, demonstrated to that city last fall that the human lives sacrificed to typhoid fever alone in twelve months amounted to $3,750,000. In my correspondence with Dr. Reilly I find that his computation rests upon a basis of five thousand dollars for each life. "This," he says, "is the cost of impure water." Think what will be saved when he, with the aid of others, makes the water pure, or approximately so!

There is no class of the community, outside the ranks of the medical profession, who are constantly working to benefit others by lessening their own means of a livelihood.

To be sure, history is full of instances of self-sacrifices. The feeling of patriotism has so stirred the hearts of men that they have willingly become penniless for country, and have, with their own hands, kindled the flames which were to destroy the dwellings that sheltered their loved ones. But in many examples, at least, which might be cited, there has been an undercurrent of selfishness spurring on to brave deeds. The physician, however, more than others, plods unselfishly his weary way along through life, striving at every step to banish from the world the very factors which contribute to his support. Seemingly, the only benefit he himself can secure is, in common with others, a greater duration of life. This has been and is being done.

Statistics show that in the sixteenth century the mean duration of life among physicians was thirty-six years; in the seventeenth century, forty-five years; in the eighteenth century, forty-nine years; and in our own century, fifty-six years. This is conceded to be due to the remarkable progress of preventive medicine, diminishing the prevalence of typhoid and other diseases.

Then, when we view the world at large, the change as regards longevity is more marked. The great preacher, Dr. Talmage, sums up the whole matter very graphically when he says: "Adam started with a whole eternity of earthly existence before him, but he cut off the most of it, and only comparatively few years were left—only seven hundred years of life, and then five hundred, and then four hundred, and then two hundred, and then one hundred, and then fifty." Then

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* Mill's *Principles of Political Economy*, chapter iii.

† *Ibid.*

the doctor goes on to note that the average of life dropped still lower, and how medical science came in, bringing the average of human life since the sixteenth century to forty-four years. "And it will continue to rise," he says, "until the average of human life will be fifty, and it will be sixty, and it will be seventy, and a man will have no right to die before ninety, and the prophecy of Isaiah will be literally fulfilled, 'And the child shall die one hundred years old.'"

Dr. Talmage was right, the Bible was right, and the physicians and health boards of our country are right when they draw the cordon of quarantine around the preventable diseases, and thus save to the nation the children who, we trust, will live to the century limit. The children must be rescued from the dangers of diphtheria, scarlet fever, etc., in order to save the state, for to them we must ever look. History has it that in the dark days of the Revolutionary War Washington was returning to his army after a brief absence. The population of the town where he was to spend the night went out to meet him. A crowd of children gathered around him, stopping his way.

Pointing to them, he said to a French count near him: "We may be beaten by the English in the field: it is the lot of arms; but see there the arm that they will never conquer."

It is the province and duty of the physician with the strong right arm of preventive medicine to secure the thousands of to-day's children for the army of to-morrow's producers. To this end much has been accomplished by microscopical examinations of the blood and secretions of the throat, making early diagnosis possible. This has long been done in diphtheria suspect cases, and now, in Philadelphia, says a medical-journal editor, a system has been inaugurated for the early diagnosis of typhoid fever, by having a specimen of the blood of the patient sent to the laboratory of the board of health.

In New York city they have a thorough and systematic examination of children attending the public schools made by physicians. The first day of this inspection 4,255 scholars were examined by 147 physicians, and 14 cases of diphtheria, 3 of measles, 8 of chicken-pox, 8 of skin diseases, and 55 parasitic diseases were found. The president of the board says: "The result of the first day's inspection shows how absolutely necessary was this kind of an inspection. It shows, I think, where the great leak was in the contagious diseases of the city of New York, and I think if it is carried on we shall be able practically to control before long the spread of those diseases which are classed as contagious. And, of course, that will reduce the death-rate."

Thus along the whole line are physicians adding years to men's lives, and keeping intact in thousands of cases every year those productive powers which would otherwise be lost to the world.

Physicians non-producers! Listen to the closing words of Dr. Malcolm Morris in his article on Medicine in the Queen's Reign:

"The greatest triumphs of all, however," he says, "in the realms of medicine in the Victorian age have been achieved in the prevention of disease and the maintenance of a high standard of public health. . . . (After) a long struggle against the powers of insanitary darkness . . . typhus fever, which used to be a scourge of large towns, is now practically unknown; the mortality from 'fevers' in general has been very greatly reduced; cholera, which several times invaded these realms in the early years of her Majesty's reign, has for a long time been prevented from gaining a footing on our shores; consumption is being brought more and more under control; several years have been added to the average of human life, and it is not only longer, but more comfortable and more effective."

I stated above that the physician had accomplished much in a general way as an economist; but, in a special manner, more. In specializing, let me call your attention to small-pox. You will call to mind that it was on May 14, 1796, that Jenner made his first successful vaccination. During the century preceding vaccination there died from small-pox throughout Europe three thousand to the million inhabitants. This in the cities, while, including country places, the mortality was over two thousand to the million inhabitants.

In England, during compulsory vaccination, the rate has fallen to fifty-three to the million inhabitants. In Sweden, from two thousand and forty-five to the million inhabitants, it has fallen to one hundred and fifty-five. In Prussia the antevaccination death-rate was over two thousand; during the permissive vaccination period it fell to three hundred and nine, and during the compulsory period it has been only fifteen to the million inhabitants.

All this goes to prove that the statement made that Jenner saved more lives in fifty years than all the battles of a century destroyed is by no means extravagant. Of course, Jenner did not originate inoculation, for perhaps the greatest doctor's fee on record was that paid to Thomas Dimsdale by the Empress Catherine for inoculating the Russian empress and her son Paul against small-pox, in 1768. He received $50,000 as a fee, $10,000 for expenses, and an annuity of $2,500, and was granted the title of baron.

The greatest mathematicians in the world could not compute the saving to the world of economics resultant from Jenner's great discovery; so that, although the lowliest physician of the land is a producer, yet, as the highest mountain peak overtops the valley below, so rises the immortal Jenner above his fellows, the prince of producers.

There have been many expositions of industry in the history of the world. At such times all the arts and trades have been represented. The most expert workmen have displayed their masterpieces; the various trades have presented many devices to herald their victories; but, to-day, as we are about to launch out upon the twentieth century, should a world's exposition be held, and the physician be accorded his true and merited place, his name would be emblazoned in letters that burn, high above all others, upon the list of economists.

Original Communications.

SOME EXPERIMENTAL INVESTIGATIONS AS TO THE EFFECTS OF THE ADMINISTRATION OF YEAST NUCLEIN UPON THE LEUCOCYTES.

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(From the Laboratory of Clinical Medicine, University of Michigan, Ann Arbor.)

(*Concluded from page 802.*)

Case XV.—Mr. K., a clerk, had pulmonary tuberculosis. The patient was emaciated, anæmic, and very weak. He had daily temperature variation from 100° to 101° F., rarely reaching 102° F.; he had also abundant purulent expectoration. His hæmoglobin was 70, red blood-corpuscles were 4,000,000, and the daily range of leucocytes was from 6,000 to 13,000, an average of 9,000. Injections of the 0.26-per-cent. solution of KOH were begun on December 11th.

December 11, 1894.—10.30 A. M., temperature, 98.8° F.; leucocytes, 6,563. Twelve cubic centimetres of the KOH solution injected. 1 P. M., temperature, 98.8°; leucocytes, 12,187. 2.30 P. M., temperature, 98.8°; leucocytes, 11,250. 3.30 P. M., temperature, 99.8°; leucocytes, 11,875. Reaction. 5.30 P. M., temperature, 101.2°; leucocytes, 10,000. Chill.

December 12th.—8.30 A. M., temperature, 99.6° F.; leucocytes, 12,500. Sixteen cubic centimetres of the KOH solution injected. 9.15 A. M., temperature, 99.6°; leucocytes, 7,000. 10.30 A. M., temperature, 99.6°; leucocytes, 12,300. 1.30 P. M., temperature, 100.4°; leucocytes, 15,625. Reaction. 3.30 P. M., temperature, 101°; leucocytes, 15,789. 5.30 P. M., temperature, 102°; leucocytes, 20,000. Chill.

December 13th.—8.30 A. M., temperature, 99.6° F.; leucocytes, 11,668. Sixteen cubic centimetres of the KOH solution injected. 9 A. M., temperature, 99.6°; leucocytes, 10,344. 10 A. M., temperature, 99.6°; leucocytes, 5,625. 11 A. M., temperature, 99.6°; leucocytes, 9,678. 2 P. M., temperature, 100.6°; leucocytes, 13,125. 4.15 P. M., temperature, 100.8°; leucocytes, 8,750. 5.30 P. M., temperature, 100.6°; leucocytes, 7,500. The patient had no chill, but late in the evening had nausea, headache, and pain in bones.

December 14th.—9.45 A. M., temperature, 99.6° F.; leucocytes, 8,750. Sixteen cubic centimetres of the KOH solution injected. 10.30 A. M., temperature, 99.6°; leucocytes, 8,750. 11.30 A. M., temperature, 99.6°; leucocytes, 8,750. 2 P. M., temperature, 100.6°; leucocytes, 11,563. 3.30 P. M., temperature, 100.6°; leucocytes, 15,000. Severe reaction. 5 P. M., temperature, 100.6°; leucocytes, 11,875. The patient had severe symptoms, but no chill or fever.

December 15th.—10.15 A. M., temperature, 98.6° F.; leucocytes, 10,000. No injection. 11.15 A. M., temperature, 99.6°; leucocytes, 9,375. 2 P. M., temperature, 100°; leucocytes, 11,000. 5 P. M., temperature, 101°; leucocytes, 17,000. No reaction. There was a marked swelling at point of yesterday's injection. This was red and hard and very painful.

December 16th.—The seat of injection is still so swollen and painful that at the patient's wish no injection was given and no blood counts made.

December 17th.—9.15 A. M., temperature, 99.8° F.; leucocytes, 9,687. No injection. 11 A. M., temperature, 99.8°; leucocytes, 8,125. 5 P. M., temperature, 99.8°; leucocytes, 8,750. Feels well.

December 18th.—8.30 A. M., temperature, 99.8° F.; leucocytes, 8,135. No injection. 11 A. M., temperature, 99.8°; leucocytes, 9,375. 1.15 P. M., temperature, 99.8°; leucocytes, 10,000. 3.30 P. M., temperature, 99.8°; leucocytes, 8,125. 5.30 P. M., temperature, 100°; leucocytes, 10,635. The patient felt unusually well during the day and thinks the KOH injections have helped him.

December 19th.—8.15 A. M., temperature, 99.8° F.; leucocytes, 13,125. Twelve cubic centimetres of the nuclein solution given. 9.30 A. M., temperature, 99.8°; leucocytes, 7,500. 12 M., temperature, 99.8°; leucocytes, 8,125. 1.30 P. M., temperature, 99.8°; leucocytes, 9,375. 3.30 P. M., temperature, 100.1°; leucocytes, 13,128. Slight chill. 5.30 P. M., temperature, 100.6°; leucocytes, 15,000. Reaction.

December 20th.—8.30 A. M., temperature, 99.8° F.; leucocytes, 8,125. Fourteen cubic centimetres of the nuclein solution injected. 8.45 A. M., temperature, 98.8°; leucocytes, 8,135. 10 A. M., temperature, 98.8°; leucocytes, 7,500. 11 A. M., temperature, 98.8°; leucocytes, 8,125. 2 P. M., temperature, 99.8°; leucocytes, 8,750. 3.30 P. M., temperature, 99.8°; leucocytes, 11,250. Slight reaction. 5 P. M., temperature, 100.1°; leucocytes, 14,375. Slight reaction.

December 21st.—8.30 A. M., temperature, 100° F.; leucocytes, 10,600. Sixteen cubic centimetres of the nuclein solution injected. 10 A. M., temperature, 99.8°; leucocytes, 8,125. 11.30 A. M., temperature, 99.8°; leucocytes, 14,375. 2 P. M., temperature, 100.1°; leucocytes, 11,250. 3.30 P. M., temperature, 98.8°; leucocytes, 11,250. 5 P. M., temperature, 99.8°; leucocytes, 8,750. No reaction.

December 22d.—9 A. M., temperature, 99.8° F.; leucocytes, 8,750. Ten cubic centimetres of the nuclein solution injected. 10.30 A. M., temperature, 100.4°; leucocytes, 11,250. 11.30 A. M., temperature, 100.4°; leucocytes, 11,250. 1.30 P. M., temperature, 100.4°; leucocytes, 14,375. 3.30 P. M., temperature, 101°; leucocytes, 8,375. No reaction. 5.30 P. M., temperature, 99.8°; leucocytes, 12,500. These observations were continued until the 26th. The injection of twelve cubic centimetres of the nuclein solution daily produced no reaction. But the daily average of leucocytes was raised to 12,000, instead of the average of 9,000 before the injections were begun. There was no marked increase at any one time, but all of the counts were moderately increased. During the injection of the KOH solution the patient had slight diarrhœa, as did all of the others to whom this was given. This patient thought that the injections, both of KOH and nuclein, gave him increased strength and appetite. The injections were stopped for a week, and the leucocytes fell to the old average of 9,000. Injections of five cubic centimetres of the nuclein were begun and kept up for two months.

During this time there was no reaction that could be separated from the symptoms of his disease, and counts of the leucocytes showed no leucocytosis. The patient improved during the first month, but afterward failed rapidly.

CASE XVI.—Mrs. H., a case of chronic bronchitis, referred from the gynæcological clinic for treatment for this condition. She had been under care in that clinic for laceration of the cervix. The patient was in fair condition. Her hæmoglobin was 85, the red blood-corpuscles, 4,500,000. Her leucocyte range, counted for three days before beginning the injections, was as follows:

December 23, 1894.—10 A. M., temperature, 98.6° F.; leucocytes, 6,786. 12 M., temperature, 98.6°; leucocytes, 6,875. 2 P. M., temperature, 98.6°; leucocytes, 11,250. 5 P. M., temperature, 98.6°; leucocytes, 10,675.

December 24th.—9 A. M., temperature, 98.6° F.; leucocytes, 9,375. Five cubic centimetres of a 0.26-per-cent. solution of KOH injected. 10.30 A. M., temperature, 98.6°; leucocytes, 13,135. 2 P. M., temperature, 98.6°; leucocytes, 11,250. 5 P. M., temperature, 98.6°; leucocytes, 8,750. No reaction.

December 25th.—9 A. M., temperature, 98.6° F.; leucocytes, 9,375. Five cubic centimetres of the KOH solution injected. 11 A. M., temperature, 98.6°; leucocytes, 9,375. 2 P. M., temperature, 98.6°; leucocytes, 10,000. 5 P. M., temperature, 98.6°; leucocytes, 12,500. No reaction.

December 26th.—9 A. M., temperature, 98.6° F.; leucocytes, 8,125. Five cubic centimetres of the KOH solution injected. 11 A. M., temperature, 98.6°; leucocytes, 12,500. 2 P. M., temperature, 98.6°; leucocytes, 15,000. Slight reaction. 5 P. M., temperature, 100.8°; leucocytes, 13,725. Slight reaction.

December 27th.—9 A. M., temperature, 98.6° F.; leucocytes, 11,250. Five cubic centimetres of the KOH solution injected. 11 A. M., temperature, 100°; leucocytes, 12,500. 2 P. M., temperature, 100°; leucocytes, 11,875. Slight reaction. 5 P. M., temperature, 98.8°; leucocytes, 8,750.

December 28th.—9 A. M., temperature, 98.6° F.; leucocytes, 8,750. Five cubic centimetres of the KOH solution injected. 11 A. M., temperature, 98.6°; leucocytes, 9,375. 2 P. M., temperature, 98.6°; leucocytes, 8,750. 5 P. M., temperature, 98.6°; leucocytes, 8,750. No reaction.

December 29th.—9.30 A. M., temperature, 98.6° F.; leucocytes, 9,876. Five cubic centimetres of the nuclein solution injected. 11 A. M., temperature, 100°; leucocytes, 20,000. Reaction. 2 P. M., temperature, 102°; leucocytes, 15,000. Strong reaction. 5 P. M., temperature, 99.8°; leucocytes, 13,750. The patient was very ill all the day with the symptoms common to the reaction obtained in the other cases. The point of injection was very red and painful.

December 30th.—10.30 A. M., temperature, 100° F.; leucocytes, 12,000. Five cubic centimetres of the nuclein solution injected. 12.30 P. M., temperature, 100°; leucocytes, 18,750. 2.30 P. M., temperature, 100°; leucocytes, 13,750. 5 P. M., temperature, 98.8°; leucocytes, 12,500. The patient had the same symptoms as yesterday, but in a less degree. The point of injection was still red and sensitive, but less so than yesterday.

December 31st.—8.30 A. M., temperature, 98.6° F.; leucocytes, 11,250. Five cubic centimetres of the nuclein solution injected. 12 M., temperature, 98.6°; leucocytes, 8,125. 2 P. M., temperature, 98.6°; leucocytes, 8,125. 5.30 P. M., temperature, 98.6°; leucocytes, 11,500. The patient has been much better all day, and there was much less redness about the points of injection.

January 1, 1895.—Five cubic centimetres of the nuclein were injected, but no counts made.

January 2d.—9 A. M., temperature, 98.6° F.; leucocytes, 9,375. Five cubic centimetres of the nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 7,500. 2 P. M., temperature, 98.6°; leucocytes, 7,500. 5.30 P. M., temperature, 98.6°; leucocytes, 8,750. The patient was well all day and there were no local symptoms.

January 3d.—9.30 A. M., temperature, 98.6° F.; leucocytes, 8,155. Five cubic centimetres of the nuclein solution injected. 12 M., temperature, 98.6°; leucocytes, 10,000. 2 P. M., temperature, 98.6°; leucocytes, 7,000. 5 P. M., temperature, 98.6°; leucocytes, 6,875. No reaction.

January 4th.—9 A. M., temperature, 98.6° F.; leucocytes, 8,750. Five cubic centimetres of the nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 10,000. 2.30 P. M., temperature, 98.6°; leucocytes, 10,000. No reaction. 7.30 P. M., temperature, 98.6°; leucocytes, 8,750.

January 5th.—11 A. M., temperature, 98.6° F.; leucocytes, 7,500. Five cubic centimetres of the nuclein solution injected. 2 P. M., temperature, 98.6°; leucocytes, 11,250. 8 P. M., temperature, 98.8°; leucocytes, 13,000. Slight reaction.

January 6th.—Five cubic centimetres of the nuclein injected. No count. No reaction.

January 7th.—9 A. M., temperature, 98.6° F.; leucocytes, 7,500. Five cubic centimetres of the nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 10,000. 5 P. M., temperature, 98.6°; leucocytes, 10,000. No reaction.

January 8th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 13,725. Five cubic centimetres of the nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 8,750. 1.30 P. M., temperature, 98.6°; leucocytes, 10,000. 5 P. M., temperature, 98.6°; leucocytes, 10,000. No reaction.

January 10th.—8.45 A. M., temperature, 98.8° F.; leucocytes, 13,275. Eight cubic centimetres of the nuclein injected in two portions into the right gluteal. 12.15 P. M., temperature, 101°; leucocytes, 16,875. Hard chill. 1.30 P. M., temperature, 101°; leucocytes, 16,875. Severe reaction. 5 P. M., temperature, 102°; leucocytes, 15,625. Severe reaction.

January 11th.—9 A. M., temperature, 99.4° F.; leucocytes, 20,000. The patient was so ill that she wished the injection and blood count discontinued for this day.

January 12th.—11 A. M., temperature, 99.4° F.; leucocytes, 15,000. 1.30 P. M., temperature, 101°; leucocytes, 15,000. The reaction continued and was very severe. The right gluteal was very red, indurated, and sensitive. No injection given.

January 13th.—8.30 A. M., temperature, 101° F.; leucocytes, 22,800. 11 A. M., temperature, 101°; leucocytes, 25,000. The local reaction has increased, the right buttock being covered with a bright-red flush; the point of injection was red and much indurated. No injection was given. 1.30 P. M., temperature, 101.8°; leucocytes, 23,000. From finger. 1.30 P. M., temperature, 101.8°; leucocytes, 26,000. From gluteal. The patient compared the symptoms to those of *grippe*.

January 14th.—11.30 A. M., temperature, 101.1° F.;

leucocytes, 20,000. From finger. 11.30, temperature, 101.1°; leucocytes, 27,000. From gluteal. The patient felt much worse to-day. The seat of the double injection of the 10th was very red and elevated; slight fluctuation was obtained. The temperature rose to 103° F. in the afternoon, the leucocytes to 30,000. An incision was made, and about two ounces of oily serum withdrawn. This consisted almost wholly of fat globules, numerous leucocytes, and red blood-corpuscles. A bacteriological examination of this was negative.

The patient decided to give up the treatment, so no more injections were given and no more counts made. The abscess was healed in a few days and the patient felt well. During the treatment she gained ten pounds, but the bronchitis remained as before.

Case XVII.—Miss T., aged twenty-five, was under treatment for nervous dyspepsia. The patient was in fair condition. Hæmoglobin, 90; red blood-corpuscles, 4,500,000; leucocytes, 5,000 to 8,000. These were counted for three days before beginning the injections. The lowest count during this time was 5,625, the highest was 8,750.

December 17, 1894.—10 A. M., temperature, 98.6° F.; leucocytes, 5,625. 11.25 A. M., temperature, 98.6°; leucocytes, 5,625. 1.30 P. M., temperature, 98.6°; leucocytes, 8,750. 3.30 P. M., temperature, 98.6°; leucocytes, 8,750. 5 P. M., temperature, 98.8°; leucocytes, 8,750.

December 18th.—9.25 A. M., temperature, 98.6° F.; leucocytes, 6,875. Sixteen cubic centimetres of a 0.26-per-cent. solution of NaOH injected. 10 A. M., temperature, 98.6°; leucocytes, 5,000. 12 M., temperature, 98.6°; leucocytes, 4,000. 1.15 P. M., temperature, 98.6°; leucocytes, 8,750. 3 P. M., temperature, 98.6°; leucocytes, 8,750. 5.30 P. M., temperature, 98.8°; leucocytes, 8,750. No reaction.

December 19th.—9 A. M., temperature, 98.6° F.; leucocytes, 5,625. Fourteen cubic centimetres of the 0.26-per-cent. solution of KOH injected. 9.15 A. M., temperature, 98.6°; leucocytes, 3,750. 10.30 A. M., temperature, 98.6°; leucocytes, 10,000. 11.30 A. M., temperature, 98.6°; leucocytes, 9,375. 2 P. M., temperature, 99.8°; leucocytes, 12,500. Headache. 3.30 P. M., temperature, 100°; leucocytes, 11,875. 5.15 P. M., temperature, 100°; leucocytes, 8,750. Slight reaction.

December 20th.—The patient was ill all the night with a severe reaction, nausea, headache, pain in bones, chilly sensations, and fever. 8.30 A. M., temperature, 101° F.; leucocytes, 16,000. No injection. Point of injection in gluteal very red. 11 A. M., temperature, 101.8°; leucocytes, 16,876. 2 P. M., temperature, 103°; leucocytes, 17,000. Severe reaction. 5 P. M., temperature, 104°; leucocytes, 17,000. The patient compared the reaction to the *grippe*.

December 21st.—The reaction continued all night, though the patient felt better this morning. The point of the KOH injection in the gluteal was swollen over an area as large as a hand, very red, hard, and sensitive. 9.45 A. M., temperature, 99.8° F.; leucocytes, 23,125. 10 A. M., temperature, 99.8°; leucocytes, 23,700. Sixteen cubic centimetres of the KOH injected into the other gluteal (left). 10.15 A. M., temperature, 99.9°; leucocytes, 18,125. 11.15 A. M., temperature, 99.9°; leucocytes, 16,875. 2 P. M., temperature, 100.2°; leucocytes, 22,500. 3.30 P. M., temperature, 102°; leucocytes, 18,125. 5.30 P. M., temperature, 101°; leucocytes, 12,500. Reaction all day.

December 22d.—The reaction continued, but of less degree. The gluteals were red and swollen. No injection was given on this day. 9.30 A. M., temperature, 99.8° F.; leucocytes, 20,000. 11 A. M., temperature, 99.8°; leucocytes, 10,625. 3.30 P. M., temperature, 99.8°; leucocytes, 6,875. Much better. 5 P. M., temperature, 99°; leucocytes, 6,875. Much better.

December 23d.—The patient felt well this morning. There were still redness and swelling at the point of injection in both gluteals, but they were much less sensitive. No injection and no reaction. 10.30 A. M., temperature, 98.6° F.; leucocytes, 8,000. 10.45 A. M., temperature, 98.6°; leucocytes, 5,625. 11.30 A. M., temperature, 98.6°; leucocytes, 6,250. 2 P. M., temperature, 98.6°; leucocytes, 8,125. 5 P. M., temperature, 98.6°; leucocytes, 8,750.

December 24th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 7,876. 11.30 A. M., temperature, 98.6°; leucocytes, 6,250. 2 P. M., temperature, 98.6°; leucocytes, 8,125. 5 P. M., temperature, 98.6°; leucocytes, 8,750. No injection on this day. The patient had entirely recovered; the local condition was much improved. The red flush had disappeared.

December 25th.—8.30 A. M., temperature, 98.6° F.; leucocytes, 8,000. Five cubic centimetres of the nuclein solution were injected. 11.30 A. M., temperature, 98.6°; leucocytes, 6,875. 2 P. M., temperature, 100°; leucocytes, 11,250. Slight reaction. 4.45 P. M., temperature, 100.4°; leucocytes, 14,375. Slight reaction.

December 26th.—9.30 A. M., temperature, 100° F.; leucocytes, 9,375. Five cubic centimetres of the nuclein solution injected. 11 A. M., temperature, 98.9°; leucocytes, 10,000. 2 P. M., temperature, 100.4°; leucocytes, 12,500. Slight reaction. 5 P. M., temperature, 100.4°; leucocytes, 10,000. Slight reaction. The patient complained of much pain at the points of injection.

December 27th.—9 A. M., temperature, 98.6° F.; leucocytes, 10,000. Five cubic centimetres of the nuclein injected. 11 A. M., temperature, 98.6°; leucocytes, 9,375. 2.30 P. M., temperature, 98.6°; leucocytes, 11,375. 5 P. M., temperature, 98.6°; leucocytes, 10,625. No reaction.

December 28th.—10 A. M., temperature, 98.6° F.; leucocytes, 12,250. Five cubic centimetres of nuclein injected. 11.15 A. M., temperature, 98.8°; leucocytes, 11,250. 2 P. M., temperature, 98.8°; leucocytes, 12,500. 5 P. M., temperature, 98.8°; leucocytes, 10,000. No reaction.

December 29th.—9.30 A. M., temperature, 98.6° F.; leucocytes, 6,250. Five cubic centimetres of the nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 13,250. Chill. 2 P. M., temperature, 100°; leucocytes, 10,000. Slight reaction. 5.30 P. M., temperature, 100°; leucocytes, 12,250. The point of injection was very painful, but not much inflamed.

December 30th.—10 A. M., temperature, 98.6° F.; leucocytes, 13,125. Five cubic centimetres of the nuclein solution injected. 12 M., temperature, 98.6°; leucocytes, 9,275. 2 P. M., temperature, 98.6°; leucocytes, 7,500. 5.30 P. M., temperature, 98.6°; leucocytes, 8,750. No reaction.

December 31st.—9 A. M., temperature, 99.8° F.; leucocytes, 17,500. Five cubic centimetres of the nuclein solution injected. 11.30 A. M., temperature, 99.8°; leucocytes, 12,750. Moderate reaction. 2 P. M., temperature, 100°; leucocytes, 15,000. Moderate reaction. 5.30 P. M., temperature, 100.1°; leucocytes, 15,000. Moderate reaction.

January 1, 1895.—Five cubic centimetres of nuclein injected. No count. Slight reaction.

January 2d.—9.30 A. M., temperature, 98.6° F.; leucocytes, 7,500. No injection. 11.30 A. M., temperature, 98.6°; leucocytes, 7,500. 2.30 P. M., temperature, 98.6°; leucocytes, 6,250. 5 P. M., temperature, 98.6°; leucocytes, 9,375. No symptoms.

January 3d.—9 A. M., temperature, 98.6° F.; leucocytes, 7,875. Five cubic centimetres of nuclein injected. 12 M., temperature, 98.6°; leucocytes, 10,000. 2 P. M., temperature, 98.6°; leucocytes, 13,000. Slight reaction. 5.30 P. M., temperature, 98.6°; leucocytes, 13,000.

January 4th.—9 A. M., temperature, 98.6° F.; leucocytes, 9,375. Five cubic centimetres of nuclein injected. 11.30 A. M., temperature, 98.6°; leucocytes, 10,350. 2.30 P. M., temperature, 98.6°; leucocytes, 9,375. No reaction. 7.30 P. M., temperature, 99.8°; leucocytes, 10,000. No reaction.

January 5th.—11 A. M., temperature, 98.6° F.; leucocytes, 7,500. Five cubic centimetres of nuclein injected. 2 P. M., temperature, 98.6°; leucocytes, 13,125. No reaction. 6 P. M., temperature, 99.8°; leucocytes, 8,125. No reaction.

January 6th.—9 A. M., leucocytes, 8,760. 11 A. M., sixteen cubic centimetres of nuclein injected. 11.30 A. M., temperature, 98.6° F.; leucocytes, 9,687. 2 P. M., temperature, 101°; leucocytes, 16,000. Reaction. 3 P. M., temperature, 102°; leucocytes, 17,250. Chill. 5 P. M., temperature, 104°; leucocytes, 22,000. Strong reaction. The patient declined to receive any more injections, so further investigation was stopped.

CASE XVIII.—Mr. C., student, in good health. Leucocyte average 8,000. Five cubic centimetres of the nuclein were taken by the mouth for three weeks. He had no reaction, and there was no disturbance of the leucocytes.

CASE XIX.—Mr. N., patient in the surgical clinic for fistula, was given five cubic centimetres of nuclein daily for six weeks without reaction or disturbance of the leucocytes.

CASE XX.—Mrs. H., aged forty-five years, under treatment for chronic bronchitis, took five cubic centimetres of the nuclein solution three times daily for two months. The daily range of leucocytes remained as before the drug was taken. The average stood at 7,500, with very slight variation. There was no reaction. The patient professed to be benefited by the treatment.

CASE XXI.—Miss T., aged eighteen years, under treatment for tuberculosis of the femur, took five cubic centimetres of the nuclein solution for six weeks three times daily without reaction. Leucocyte counts made at frequent but irregular intervals showed no leucocytosis.

CASE XXII.—Mr. F., aged twenty-five years, pulmonary tuberculosis, with a constant leucocytosis of 15,000 to 20,000, took five cubic centimetres of the nuclein solution by the mouth daily for three weeks without reaction or change in the leucocyte range. No change in the patient's condition.

CASE XXIII.—Mr. R., aged twenty-six years, student, in good health, took five cubic centimetres of the nuclein solution by the mouth three times daily for three weeks. No effect was observed, and no disturbance of the leucocytes.

CASE XXIV.—Mr. S., aged twenty-two years, under treatment for secondary anæmia following hæmorrhage, was given five cubic centimetres of the nuclein solution by the mouth three times daily for three months without reaction or disturbance of the leucocyte range. For one month he took in the same manner eight cubic centimetres of an extract of bone marrow. This gave no reaction, and the leucocytes counted at frequent intervals showed always a very low count, never rising above 6,000. In addition to the marrow extract the patient had a diet during this month consisting almost entirely of cooked marrow and blood-puddings. During this month he made a gain of twenty per cent. hæmoglobin. It is, of course, an open question as to what part the treatment had in bringing about this improvement.

CASE XXV.—Mr. S., aged forty-five years, with genito-urinary tuberculosis, took five cubic centimetres of the nuclein solution by the mouth three times daily for six weeks under observation without reaction or leucocytosis. For three weeks he had daily injections of the same amount without reaction or change in the leucocyte count. There was no improvement under the treatment.

CASE XXVI.—Dr. R., with genito-urinary tuberculosis, had received daily injections of five cubic centimetres of nuclein solution for three months without interruption. He had rarely any reaction. According to his statement, the reaction seemed to depend upon the manner in which the injection was given. He was under observation for several days only when his leucocytes were counted. For two days the count was as follows: 9 A. M., leucocytes, 5,625. 11.15 A. M., leucocytes, 6,875. 2.45 P. M., leucocytes, 9,375. 5 P. M., leucocytes, 7,500. Though this observation was very short and incomplete, it would go to show that there had been no lasting leucocytosis produced by the long-continued use of the nuclein injection. Under this treatment the patient's symptoms disappeared, and pus and tubercle bacilli were no longer found in his urine. (This patient was under Dr. Vaughan's treatment, and was seen by me for a few days only when the leucocytes were counted.)

In summing up the results of the experiments with these twenty-six cases we find—

1. In eight cases in which five cubic centimetres of the nuclein solution were given by the mouth three times daily for different periods of time there was no reaction and no disturbance of the leucocyte range. In one case in which there was given a glycerin extract of bone marrow for a month there was practically a hypoleucocytosis. These cases were Case XVIII, normal individual; Case XIX, rectal fistula (tuberculous?); Case XX, chronic bronchitis; Case XXI, bone tuberculosis; Case XXII, pulmonary tuberculosis with leucocytosis; Case XXIII, normal individual; Case XXIV, secondary anæmia; Case XXV, genito-urinary tuberculosis.

2. In nine cases in which injections of five cubic centimetres of the nuclein were given daily for different periods of time there was no reaction and no leucocytosis. These cases were Case XXVI, genito-urinary tuberculosis; Case XIII, sexual neurasthenia (on one day there was a slight reaction and the daily average was increased); Case XI, pulmonary tuberculosis with leuco-

cytosis; Case X, pulmonary tuberculosis without leucocytosis; Case IX, tuberculosis of cervical glands; Case IV, bone tuberculosis with leucocytosis; Case V, pulmonary tuberculosis; Case VI, pulmonary tuberculosis; Case VII, bone tuberculosis; Case VIII, genito-urinary tuberculosis; Case XV, pulmonary tuberculosis. (The injection of five cubic centimetres daily for two months in this case had no effect, but reaction and leucocytosis were produced by larger doses.)

3. In eight cases injections of nuclein in amounts from four to sixteen cubic centimetres produced a definite reaction and well-marked leucocytosis. These cases were Case I, sexual neurasthenia; Case II, nervous dyspepsia; Case III, bone tuberculosis with leucocytosis; Case XII, chronic furunculosis of skin (one slight reaction with leucocytosis); Case XIV, muscular rheumatism; Case XVI, chronic bronchitis; Case XVII, nervous dyspepsia; Case XV, pulmonary tuberculosis.

4. The leucocytosis occurred only when there was a local and general reaction. It occurred more constantly when a large injection was given. The occurrence of reaction and leucocytosis after the injections was not constant in any of the cases, but subject to wide variations. The reaction appeared sometimes very soon, at other times it was delayed. The local reaction consisted of a swelling and induration of the area about the point of injection, usually about the size of a hand and covered with a deep red flush. The general symptoms were compared by the patients to *grippe*, and consisted of headache, nausea, vomiting, weakness, pain in muscles and bones, chills, and fever. Epistaxis and diarrhœa were also prominent symptoms. As a rule, the reaction lasted but a few hours, but on several occasions it extended over two or three days, the leucocytosis continuing during this time. The leucocytosis usually reached its height just before the highest temperature, but declined much more slowly. In some instances the leucocytosis occurred without any increase of temperature.

5. Injections of a 0.6-per-cent. NaCl solution and of a 0.26-per-cent. solution of NaOH produced no reaction and no leucocytosis. The injection of a 0.26-per-cent. solution of KOH produced a reaction and a leucocytosis in all respects similar to that resulting from the injections of the nuclein solution, except that these followed the nuclein injections much more uniformly than they did the injection of the alkali.

6. When the counts were made soon after giving the injection, it was found that there was almost always a marked decrease in the number of the leucocytes. This lasted usually two to three hours, after which the increase took place. This point has been noted by many observers who have tried the effect of other injections upon the leucocytes.

7. It might be questioned whether the leucocytosis produced by injections is not wholly the result of an inflammatory process. I have found that the application of a cantharides plaster an inch wide by four long to the lumbar region of a healthy individual increased the leucocytes in six hours to three times the normal number. The injection of large amounts of solutions in themselves not inert may be sufficient to produce a general leucocytosis because of the local damage to the tissues. But many things make it doubtful that this is an inflammatory leucocytosis. The fact that the general average of the leucocytes is raised at times when there is no local reaction is very much opposed to this idea.

8. The proportional count of the white cells in those cases in which a leucocytosis occurred remained practically unchanged, except in a few cases in which the percentage of the polynuclear forms was increased.

Therefore, in conclusion, I should say that the power of nuclein to increase the leucocytes can only be definitely known when the nuclein is injected in solutions that in themselves produce no leucocytosis. Systematic observations of the effect of the administration of pure nucleinic acid are now being carried on in this laboratory by a colleague, who will later make report of the same. Moreover, since large injections produced invariably some degree of leucocytosis, experiments must be made with doses of greater strength. Dr. Vaughan informs me that the solution used was really less than a one-half-per-cent. solution, and that at present he is using a ten-per-cent. solution. The effect of this stronger solution will be studied and reported later.

NOTE.—Since the writing of this article Dr. Vaughan has published, in the *Medical News* for February 27 to March 27, 1897, reports of cases in which pure solutions of much greater strength were used with more constant effects upon the leucocytes. This report is therefore valuable as it shows the results obtained by very weak solutions, and, moreover, presents systematic leucocyte counts made upon various individuals for continued periods of time. It is hoped that attention may be called to the importance of this procedure.

ADENOIDS AND HYPERTROPHIED TONSILS IN CHILDREN.*

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IT is not necessary at this date to go extensively into the literature of adenoids and hypertrophied tonsils in children, nor is it called for in so general a treatment of the question as I propose to give at this time; yet no paper can have any claim to completeness which does not in justice acknowledge our common indebtedness to the late Wilhelm Meyer, of Copenhagen, who first brought the subject of adenoids prominently before the profession. His original paper was so exhaustive and was based upon such careful observation that little of material value has been added to it by the many writers who have succeeded him.

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* Read before the Hampden District Medical Society, April 19, 1897.

It would be more correct to use the term lymphoid hypertrophy in describing the growths in the vault of the nasopharynx; but the term adenoids, as used by Meyer, has been so commonly adopted that it may be as well to retain it. The subject of this paper has received so much attention, and the essential points in symptomatology and treatment are so well understood, that to some of you its presentation may seem like offering a portion of ancient history; yet it is only nine years since Hooper read his paper before the New York Academy of Medicine, and, of course, it is less than that time since even specialists in this country have given to adenoids the attention which the importance of the subject merits. There are still many practitioners who, not having seen the growths *in situ*, and not realizing their connection with grave defects in form and function, either fail to advise radical treatment, or positively counsel that nothing be done, strangely saying that the child will outgrow the affection. We have thus ample warrant for devoting a little time to the discussion of this subject.

I desire especially to emphasize the importance of bearing in mind the influence which lymphoid tissue in the nasopharynx has upon the ear. It is readily appreciated that this mass in close proximity to the Eustachian tubes must have a marked influence upon the middle ear, but, according to Blake and Dench, this influence extends to the labyrinth also, so that the results to hearing may be most profound. It is but a fact of common observation that a large fraction of the cases of deafness is due to the presence of adenoids in childhood; and for our comfort there follows the corollary that if we observe and properly care for these cases in early childhood we shall prevent that same large proportion of deafness. How striking is the connection between the presence of adenoids and aural disease is shown by the statistics of Woaks, who says that ninety-five per cent. of the cases present aural complication; Urbantschitsch, seventy-five per cent.; and Meyer, in his original one hundred and two cases, found over seventy per cent. It will be profitable for us to consider in a general way the regional anatomy of the parts involved, and for this purpose I have copied from Browne a sectional view of the pharynx. This clearly shows the close relation between the pharyngeal tonsil and the Eustachian tubes, and how positively any hypertrophy of this tissue encroaches upon the calibre of the air-passage. We get thus a clear idea of the intimate association necessarily existing between affections of the nasopharynx and the ear. With this we will take up the symptoms arising from obstructed respiration, the deformities produced, and the treatment essential for permanent relief. The subject is simplified both in pathology and treatment by following the limitations implied in the title, for the methods of operating in adults, made necessary by danger from hæmorrhage, are not to be thought of in dealing with the affection in children.

The affection seems almost universal in its distribution, though it was at first thought to be limited to cold or temperate climates. Meyer, in an article reprinted in the *Medical Record*, April 4, 1896, shows from statistics and from portraits of historical personages and from study of antique busts that hypertrophy of the pharyngeal tonsil is to be found in every country, and that it has existed in past ages. He shows the photographs of a young Greenlander and of a young Malay which present the characteristic facies; also a reproduction of a portrait of Canova, a noted painter, born in 1755. This individual was also deaf. The affection was found to be common among the Indians, the Greenlanders, South Americans, pure Mongols in China, and the natives of southeastern Asia.

Ætiology.—It is quite probable that the element of heredity is an important one in the causation of adenoids and hypertrophied tonsils. It is not uncommon to find several children in one family suffering from the affection, and careful inquiry into the history of the parents will often bring out the fact that one or both of them have endured similar symptoms. I recently operated upon two little girls in one family, whose father bears unmistakable evidence, in his facial deformity, of having suffered from the same condition. Dr. Hooker has called my attention to a family in which there are four boys, all of whom have adenoids. Much has been said of struma as a causation, and while strumous children do suffer from the affection, and in them there is a greater liability to recurrence after operation, yet only a small proportion of the children who have adenoids and hypertrophied tonsils are strumous, so that the relation of cause and effect is not established. The severe inflammation of the faucial region which accompanies diphtheria and the eruptive fevers often serves as the beginning or adds to the growth of an already existing hypertrophy, as pointed out by Bosworth and confirmed by all observers. Common causes are the congestions induced in our climate with its sudden variations of temperature, and more noticeably by the great differences between many of our overheated houses and the outside temperature in winter. A child may go several times a day from a room heated up to nearly 80° F. to play out of doors when the temperature is near zero. Such sudden and violent changes, occurring frequently, can but result in congestion and consequent overgrowth of tissue.

In children lymphatic tissue is especially susceptible to vascular changes on comparatively slight causes, and the repeated colds from which they suffer keep this lymphoid tissue of the pharynx congested—overfed, so to speak—and overgrowth is to be expected. This tendency should be borne in mind in the treatment after operation, and suitable means taken to eliminate this cause of recurrence of the adenoids. Cold and dampness are assigned as causes, and it would seem reasonably so, since they are so constantly responsible for producing ordinary colds with the attendant faucial congestions. In great cities many children are doomed to live in damp basements, and these must present a large proportional number of cases.

Pathology.—It is quite probable that a description of the gross—the macroscopical—appearance of adenoids and tonsils will be of more general interest than the microscopical. The faucial tonsils come so often under observation in the routine examination of the throat that we are all familiar with the ordinary appearance presented of a firm, ovoid mass, having its greatest diameter vertical, a color about that of the surrounding mucous membrane, the exposed surface showing six to ten or twelve open lacunæ. It may not be so generally known that the tonsil is sometimes bilobed or even presents three separate masses, one above the other, divided by deep sulci. This is a point it is well to bear in mind when operating, and before considering the operation complete pass the finger over the site of the tonsil to make sure that a considerable fragment does not remain behind. I have seen several instances in which the tonsillotome passing between two portions of a large tonsil has removed but one of them, leaving a large fragment behind. I have such a specimen to show you. So large a mass was removed on applying the tonsillotome to the left tonsil that I inferred the operation was complete. Later examination showed an equally large mass remaining. It was removed at a subsequent sitting. The gross appearance of the adenoids is not so familiar, as this growth is accessible to view only with the rhinoscopic mirror. It commonly presents as an irregular mass, the exposed surface of which looks somewhat like the side of a cluster of grapes. The color is rather lighter than that of the surrounding mucous membrane. The shape and position are well shown by the photograph from Dr. French's case, which I have the pleasure of showing you. Sometimes the mass seems to be made up of folds of tissue. The folds are placed antero-posteriorly with deep sulci between them. Microscopically, the main mass of the tumors is composed of lymph tissue, formerly termed adenoid tissue, from the mistaken idea that this is glandular in nature. The true structure has long been known, but the term adenoid, originally employed by Meyer, still clings. The hypertrophied tissue in the nasopharynx and the faucial tonsils is identical in structure. The surface is covered with columnar ciliated epithelium, and the mass is made up according to the general structure of lymphatic tissue. There is a delicate ill-defined reticulum crowded with lymph corpuscles. The formations under consideration, then, are simply a hypertrophy of lymph tissue normally present in the pharynx and nasopharynx.

The lack of the fibrous element in the pharyngeal tonsil accounts for its friability. The most gentle manipulation with the index finger in examining the nasopharynx is usually attended with bleeding, if there is much hypertrophy present, the tissue breaking down very readily. The difference in firmness between hypertrophy of the pharyngeal and faucial tonsil is due to the fact that the latter lies in a region constantly exposed to the pressure and irritation of food in swallowing, and this results in its greater density. The pharyngeal tonsil is protected by the soft palate from impact with any substance, and remains much softer. In a patient who has adenoids it is common to find upon the posterior wall of the oropharynx scattered lymph follicles which give the surface a roughly granular appearance. Sometimes the lymphatic tissue of this particular region is gathered in considerable masses just behind and parallel to the posterior pillars. I have under the microscope for your inspection a section of lymphatic tissue taken from the pharynx.

Symptomatology.—In the appearance of a child suffering from the presence of adenoids and hypertrophied tonsils the most striking symptom is due to the obstruction to nasal respiration. The mouth is habitually open. The dropping of the chin elongates the features, and this appears to be still further accentuated by the narrowing of the face from the unnatural air pressure. In normal respiration the mouth is closed and the air passes freely into the nostrils. The pressure of air within the natural passages counterbalances that upon the external surface, and normal development takes place. In the mouth breather there is undue air pressure upon the hard palate, tending to force it upward and producing the high-arched palate. The same force exerted upon the face of the growing child narrows it in its lower half. The nose is compressed laterally from the same causes, and these conditions, together with the swelling and elevation of the lower lid, which causes what Meyer calls the veiled look about the eyes, constitute the characteristic physiognomy well illustrated in Dr. French's composite photograph kindly loaned me for this occasion, as well as by the photographs of individuals, which I now show you. I am sure you will all appreciate the courtesy of Dr. French in loaning his photographs. In marked cases the child looks stupid, and is so. This stupidity has, according to A. Jacobi and Solis-Cohen, an anatomical basis in the relation between the lymphatic circulation through the brain and the nasopharynx. The presence of the large mass of hypertrophied tissue interferes with the proper drainage, so to speak, of the brain. The dull expression is often still further accentuated from the fact that the hearing is so often affected. Another prominent symptom is noticeable at night. The pharyngeal tissue being more relaxed in sleep, the breathing is noisy, often snoring. The obstruction to the entrance of air causes restlessness. The labor of respiration is sometimes so great that the child is bathed in perspiration. Another objective symptom which forces itself upon the attention of the most unobserving is the altered character of the voice, the so-called nasal twang, due to the lack of nasal resonance and the faulty enunciation of certain sounds, as *m* and *n*. The effect of considerably enlarged tonsils upon the voice is to make it seem as though one were speaking with the mouth full. In some well-marked cases certain deformities are present besides those of the face, alluded to. These are most marked in the chest, and the peculiar conformation, the narrow, pigeon breast, is well shown in Dr. French's photographs, as well as in some I had the good fortune to secure. The improvement wrought by restoring perfect nasal respiration is forcibly depicted in the photograph of the boy taken two years after operation. In this case not only has the chest assumed a normal development, but the boy's whole appearance is revolutionized. In a case sent me by Dr. Clark, of Holyoke, and operated upon early in January of this year, the mother recently called my attention to the fact that the boy's chest, which was deformed, is already improving in shape. Another noticeable and annoying symptom, to the patient and its parents, is the constant flow of mucus from the nose. Usually the nose here acts merely as a channel through which the fluid flows—itself producing little. The mass of hypertrophied tissue in the nasopharynx acts mechanically as a foreign body and excites the surrounding mucous membrane to increased secretion of fluid, and mucus is poured from the surface of the adenoids themselves. This free flow of mucus drains forward through the nose and downward into the pharynx. We thus have the constant discharge and the attendant sniffing which is so familiar. This symptom disappears at once after operation. It is not uncommon to have the mother remark, upon the first visit after operation, that the child has had no occasion to use a handkerchief since operation.

I must not fail to mention at some point the fact that children subject to this affection are more susceptible to infectious disease. This comes about in several ways: they possess a lowered vitality; they are mouth breathers, and the inspired bacteria find instant lodgment upon an unhealthy surface, which proves a good culture ground ready for their propagation. The unobstructed healthy nose has some power of checking the entrance of bacteria into the throat and of destroying and expelling certain that are caught upon its mucous surface, but mouth breathers have no such protection. These subjects, too, suffer more severely from those infectious diseases which have an active local process in the throat—as diphtheria, scarlatina, etc. Many cases of spasmodic croup are due to the presence of this hypertrophied lymphoid tissue in the pharynx, and are preventable by its removal. Prominent among the symptoms which attract attention is the fact of deafness, which occurs so often, and to which allusion has already been made, and this point deserves our most careful and earnest consideration. A large majority of the cases of deafness in children are due to the presence of these growths in the pharynx, which means that this deafness is preventable. In early childhood hearing can be restored in most cases of nonsuppurative affections of the middle ear, and this without further treatment than the removal of adenoids and enlarged tonsils, followed by the use of inflation in some cases, though in many no after-treatment will be required. Some of the suppurative middle-ear cases, if caries of bone be absent, belong in almost the same class, so far as cure of the active process and restoration of function is concerned. Many of the long-standing purulent cases recover rapidly after operation upon the nasopharynx, and a good degree of hearing returns. As illustrations of the improvement in hearing in nonsuppurative middle-ear cases I will briefly mention two out of many cases:

D., girl, aged six years, brought to me from Northampton because of deafness. Adenoids and hypertrophied tonsils found to be present. Operation advised. Within ten days of operation father wrote that there had already been marked improvement in hearing.

S., boy, aged four years. Advice sought because of deafness. Adenoids and hypertrophied tonsils present. Removed. Hearing noticeably improved within six days of operation. No after-treatment in either of these cases.

As an illustration of the influence of the presence of adenoids and enlarged tonsils upon suppurative otitis media, I will cite the case of N., girl, aged eight years, brought to me because of deafness and free purulent discharge from both ears. History given of repeated attacks of suppuration of the middle ear, and deafness had now been noticeable for a year and growing worse. A large mass of adenoids and enlarged tonsils being present, operation for their removal was performed and the ears were syringed with boiled water. Discharge ceased within two weeks, and hearing is perfectly restored.

Of course, with these are to be included those cases of frequently recurring attacks of purulent otitis coming on whenever the child contracts a severe cold. These attacks are curable by the removal of the hypertrophied tissue from the pharynx. In this connection mention must be made of the striking relation between the presence of the hypertrophied pharyngeal tonsil and deaf-mutism. The last number of the *Journal of Laryngology, Rhinology, and Otology*, April, 1897, has an article upon this subject by Sendziak, of Warsaw. He quotes several authorities, who report from 57.5 per cent. to seventy-three per cent. of deaf-mutes as suffering from the presence of adenoids. Of the whole number of children, but one per cent. to five per cent. have adenoids. These figures are most impressive. Along with this statement should be mentioned the fact that in cases where the condition has been recognized early and the adenoids removed, hearing has been restored, and the inference is justifiable that if we observe infants and young children, and upon the first symptom of the presence of adenoids operate for their removal, many cases of deaf-mutism can be prevented. One at least of my recent cases belongs with this class.

D., boy, seven years of age. Referred to me by Dr. Rice. The child was feeble physically and undeveloped mentally. Though at an age when the normal child is long past the kindergarten, he was still in it, and the despair of his teacher, for he made no progress and took little interest in what was done by those about him. He was operated upon in May, 1896, and inflation of the middle ear has been continued since. His general condition, as well as his hearing, has been greatly improved. He has made such progress at the kindergarten that, on the advice of his teacher, he has been sent to the public school. In his use of language he has made as great a gain as in any other direction.

Diagnosis.—The diagnosis is ordinarily a simple matter. The characteristic physiognomy attracts attention, and examination of the oropharynx shows the tonsils enlarged. We have but to exclude enlargement due to acute inflammation and to be sure that we look into the pharynx when it is in a state of rest. A certain contraction of the muscles of the upper part of the throat—"a gagging"—invariably takes place when a spoon or tongue-depressor is placed upon the base of a child's tongue; the tonsils are thus forced forward and toward the median line, so that there is great exaggeration of any present hypertrophy. Organic disease of the tonsil other than the simple hypertrophy can as a rule be excluded in children, so that we have to establish nothing further than the fact of hypertrophy. The diagnosis of adenoids is not so easy, as they are not so readily accessible, but given enlarged tonsils together with any of the symptoms already mentioned, we have the presumption of their presence. It is rare to find hypertrophy of the tonsils without accompanying enlargement of the lymphoid tissue of the nasopharynx. Adenoids may be present without large tonsils, but the reverse is far less common. In the absence of familiarity with the use of the rhinoscopic mirror, the index finger furnishes a ready means of diagnosis, not only of the presence but of the exact situation and size of the mass. The child will naturally struggle against this method of examination, and it is wise to protect the finger, lest it be bitten. The manipulation should be as gentle as possible, for even with a light touch the examination is followed by some bleeding.

Prognosis.—The prognosis in these cases can always be considered as good, the symptoms dependent upon the presence of this hypertrophied lymphoid tissue disappearing after operation for removal of the growths. It is at the same time to be admitted that there is a tendency for this tissue to atrophy as the child approaches adult life, and the vault of the pharynx increases in size with the child's development, so that the growths occupy relatively less space, respiration thus becomes more nearly normal, and many of the earlier symptoms disappear. However, the tissue does not always atrophy, and if it does, in part, it leaves behind conditions producing intractable postnasal catarrh, and the inflammations to which it is constantly subjected cause adhesions with the Eustachian cushions, and, as the tissue shrinks, these show their presence as adhesive bands stretching across the fossa of Rosenmüller. Although these growths may atrophy so that later in life there is free respiratory space, the deformities caused by their presence during the stage of active growth are permanent and the damage done to the ears may result in lifelong deafness. It is to be borne in mind, too, that these children are more susceptible to contagious disease, and in them diphtheria and scarlatina prove more than ordinarily serious affections because of the severer throat complications. There are thus grave risks in postponing operation; moreover, no tenable reason can be advanced against their early extirpation. Bosworth well remarks, in reference to the statement sometimes made, "the Creator placed these organs in the fauces, and therefore they should not be removed," that it is unnecessary to say that enlarged tonsils are not the result of creative intelligence, but of a diseased process.

Treatment.—In the treatment there is but one method worthy of consideration, and that is extirpation, and this should be not a slicing off of a fraction of the tonsil, as we sometimes hear recommended, but a thorough removal of all the hypertrophied tissue in the fauces and the vault of the pharynx. Even the complete removal of the tonsils alone is not sufficient—the adenoids should also be removed. As to the time for operating—barring acute illness—the sooner the child is operated upon after diagnosis is made the better for all concerned. Nothing is gained by endeavoring to build up the patient preparatory to operation. Give the child a chance to breathe by operating, and it will improve far more rapidly than is otherwise possible. When more oxygen can be obtained through the improved respiration, appetite, digestion, and assimilation all seem to improve and progress is rapid.

It is not necessary to enter upon a description of the great array of instruments which have been devised for the operation, but it will suffice to exhibit to you those instruments in common use. My own preference is for the Mackenzie amygdalotome, and for the Brandegee forceps for the adenoids, using the Gottstein curette to complete the operation. As tending to prevent hæmorrhage in the removal of tonsils, Farlow's use of the cold-wire snare is to be commended, but I have had no experience with its use in children, and consider that the Mackenzie amygdalotome leaves little to be desired. Dangerous hæmorrhage in the child is so exceedingly rare that the use of the galvano-cautery is not to be thought of.

The operation ought always to be done under an anæsthetic—it is understood that we have children only in mind—and I prefer full anæsthesia. The tonsils can be removed very quickly, but one ought to work deliberately in the nasopharynx, for the success of the operation depends upon the thoroughness with which this particular part of the work is done. I operate with the child lying upon its back upon the table. After the patient is etherized the Denhard mouth-gag is introduced upon the left side, the operator standing upon the right. If the tonsils are not large the adenoids may be removed first; this part of the operation can be completed before the child recovers consciousness; the tonsils can then be quickly removed, and there is no necessity for a return to the anæsthetic.

Commonly the tonsils occupy so much space that they must be removed first, and before the hæmorrhage has ceased the child has partially recovered consciousness, so that it is necessary to resort to further use of ether. Upon the removal of either the tonsils or the adenoids, the child is at once turned over the edge of the table, face downward, with the head held somewhat lower than the body, that the blood may not be inspired into the larynx. The hæmorrhage is always considerable, and has seemed to me to be most free from the part first operated upon. The hæmorrhage ceases spontaneously within a few moments, and the child is put to bed, where it should remain for at least twenty-four hours.

The dangers of the operation are, first, hæmorrhage, both primary and secondary, and second, damage to the surrounding structures. Dangerous hæmorrhage, if one uses proper instruments, must be rare indeed, and if we are careful to exclude cases of hæmophilia the operation is almost entirely free from danger on this score. I have had five cases of secondary hæmorrhage, two of them among the one hundred and twenty-three cases operated upon in this vicinity. These two both occurred upon the fifth day after operation, and each came on when the child was in bed, so that it could not be attributed to any undue activity on the part of the child. Neither case resulted seriously, though parents and attendants were somewhat alarmed.

As to the danger of damage to the surrounding structures in operating, this is almost *nil* in the hands of one familiar with the anatomy and the manipulation of the parts and provided with proper instruments. Of course, no one will attempt any operation without such familiarity. Occasionally, in strumous subjects whose powers of resistance are slight, a streptococcus invasion follows the operation. This will probably involve a middle-ear suppuration. In one of the one hundred and twenty-three cases referred to this accident occurred, but the active process continued but a few days and hearing was ultimately much better than before operation.

By observing the formation of the tonsil it will be found that there is really less danger of hæmorrhage when the gland is completely removed than when only a portion is excised. The tonsil often appears pedunculated, hanging down into the pharynx, considerably below the level to which it is attached. Sometimes this is so marked that if half the tonsil is sliced off we really cut through a mass of tissue which leaves an exposed surface twice as great as when the gland is removed close to its base. To say nothing of thus leaving the large stump, a greater degree of hæmorrhage is invited than when more thorough work is done.

To sum up, we are warranted in saying that we have in the operation for removal of adenoids and tonsils a safe, prompt means of relieving a distressing and even dangerous condition, and that this means of relief ought to be employed in every case where there is sufficient hypertrophy to produce any of the symptoms we have considered.

TWO CASES OF
PULMONARY CONSUMPTION SUCCESSFULLY TREATED WITH IMMUNIZED SERUM.

By F. LEIGHTON JOHNSON, M. D., Ph. G.,
CORONA, N. Y.

The general failure in the cure of consumption is and has been one of the opprobria of medicine from early times. The literature on the subject teems with various cures exploited upon numerous occasions, only to be relegated to oblivion when compelled to stand the test of trial. Nearly every issue of our standard medical journals gives prominent space to a new article upon this most dreaded of diseases, but the perusal of it rarely throws any new light upon an old subject.

To-day we are in possession of valuable pathological facts relative to the cause and course of the disease made known by elaborate bacteriological experiments. We also know that, therapeutically, certain drugs, like cod-liver oil, creosote, the hypophosphites, etc., together with proper climatic surroundings, exert a beneficial influence upon the disease in its incipiency, with occasional cures.

There comes a time, however, with a large majority of cases, when medicine and all other available means at present recognized by the profession at large cease to exercise that beneficial influence upon the malady.

The well-known symptoms now present themselves and resist effectually all the skill which we may bring to bear upon a given case.

Koch's tuberculin was discarded because of its terrific reaction, though undoubtedly capable of exercising a beneficial influence upon the disease.

To-day we have the immunized serum from the mule for the cure of tuberculosis, dispensed by several prominent laboratories. In this article, I simply wish to state my experience with this serum, which I employed in two cases pronounced incurable by several reliable physicians.

CASE I.—F. I., aged twenty-eight years, postal clerk, came to me on April 15, 1896. Patient weighed one hundred and thirty-seven pounds, having lost thirteen pounds during the preceding three months. Complained of constant cough; frequent hæmorrhages from the lungs, varying in quantity from two to ten ounces of bright-red blood and occurring from two to three times weekly; night sweats, prostration, and constant loss of weight. The sputum contained numerous tubercle bacilli.

Examination revealed well-marked vesicular murmur over apex of left lung, extending as low down as fourth costal cartilage. I placed patient on tonics, hypophosphites, and carbonate of creosote. He returned on April 26, 1896, stating that there was no improvement. The hæmorrhages were still occurring, and patient had failed markedly since first seen. He now sought treatment at two prominent New York hospitals. Sputum was examined in both instances and case pronounced consumption, with an unfavorable prognosis. At both institutions cod-liver oil and creosote were prescribed without results; hæmorrhages still continued; loss of weight continuous and rapid.

Patient came back to me on May 25, 1896, having lost eleven pounds in weight since I first saw him. Hæmorrhages were still appearing at frequent intervals. He was very anæmic; pulse rapid and weak. Complained of shortness of breath; could not sleep more than three or four hours out of the twenty-four; no appetite; sputum nearly always tinged with blood. A walk of one block from his residence to my office completely prostrated him. Was forced to give up a paying position because of physical disability.

I advised the serum treatment, which was accepted. First injection of five cubic centimetres was given on May 28, 1896. This was repeated on June 1st, and continued at weekly intervals until January 1, 1897.

Shortly after the second injection there was a rapid improvement in all the symptoms; a continuous gain in weight; cough gradually subsided, finally ceasing during April, 1897. Night sweats disappeared entirely the latter part of June, 1896. Patient resumed work Easter Monday, 1897. Present weight, one hundred and thirty-seven pounds, having gained three pounds during the past three weeks. There is a clear respiratory murmur over the formerly affected area.

Aside from the carbonate of creosote administered during the first two weeks of the serum treatment and discontinued because of a rebellious stomach, there was no auxiliary treatment. Two hæmorrhages occurred after the second injection, one during August, 1896, and one during December, 1896, both being slight and following upon overexertion and needless exposure. Patient at present time is enjoying better health than at any time during the past four years.

CASE II.—H. E., aged thirty-seven years, male; weight when in health, one hundred and twenty-seven pounds. Ill-health dated from an attack of pleurisy with effusion, which occurred during 1892.

He came to me on August 20, 1896; weight, ninety-eight pounds; was unable to walk from the trolley car to my office, a distance of about two hundred feet, without the support of two friends who accompanied him; pulse, 125, weak; suffered from extreme shortness of breath; very anæmic. There was frequent cough; severe night sweats; absolute loss of appetite; insufficient strength to walk more than ten or twelve feet unsupported, on account of which he was compelled to give up a lucrative position. Patient had taken cod-liver oil, creosote, and the hypophosphites *ad nauseam.* Case had been pronounced hopeless by a reliable physician.

Sputa contained numerous bacilli.

Injections were begun on August 25, 1896, and continued at bimonthly intervals until December 15, 1896, when they were stopped. Aside from strychnine and digitalis, given to stimulate a weak heart, there were no adjuvants employed.

Improvement followed after the first injection, and has continued up to the present time. Night sweats disappeared after fourth injection. Cough ceased during February of the present year. Present weight, one hundred and twenty-seven pounds. Resumed work December 30, 1896. I saw patient on September 20, 1897. He states that "he feels better than at any time during the past three years." Abscesses occurred in both these cases after the treatment had been employed about three months. They discharged a quart or more of creamy pus, with an odor suggestive of sulphureted hydrogen. Antiseptic precautions were observed. I regard them as being due to the slow absorption of the serum and the employment of comparatively the same sites for injection. Otherwise I have had no unpleasant symptoms arise. The most striking feature of the treatment is the immediate improvement in the cough. I have used the serum in several hopelessly incurable cases, with a resulting decrease in night sweats and the amount of sputum expectorated.

At the present time I have an advanced case undergoing treatment, in which the employment of five cubic centimetres of the remedy renders the patient comfortable for a period of from two to three weeks. I use a Pasteur antiseptic syringe and inject, as deeply as possible, over the abdomen, repeating the injections every seven or ten days, according to the amount of improvement observed.

Therapeutical Notes.

Oil of Cade in the Treatment of Lupus Erythematosus.—In the Section in Dermatology and Syphilis of the Sixty-ninth Assembly of German Naturalists and Physicians, Dr. Block (*Deutsche Medizinal-Zeitung*, October 11, 1897) referred to a case in which, after the failure of Schütz's treatment by local applications of Fowler's solution, a cure had resulted in two months from frictions with the following ointment:

℞ Oil of cade	5 parts;
Zinc oxide, Green soap, each	10 "
Vaseline	35 "

M. A mercurial plaster was worn at night.

An Application for Favus of the Nails.—The *Therapeutische Wochenschrift* for November 21st states that Leistikow first sprays the nails with an ethereal solution of pyrogallol, and then brushes on the following mixture:

℞ Pyrogallol	3 parts;
β-naphthol	4 "
White precipitate	2 "
Tincture of guaiacum	60 "

M.

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PUBLIC MONEY AND PRIVATE CHARITY.

The unedifying spectacle was lately presented—and not for the first time—of contention between medical men of New York, appearing before the board of apportionment, as to the propriety of certain sums of money being given from the public funds to various private institutions of a more or less charitable character. It was contended by some of these gentlemen that the city ought not to give money to any institution which was not controlled by itself, but their efforts were chiefly in the direction of obtaining a reduction of specified amounts asked for by individual hospitals, dispensaries, and the like. The arguments employed seem to have been hot, in some instances nothing more or less than disputing and recrimination. It is remarkable how little impression they appear to have made on the board; at the time of our writing this article very little cutting down has been done. Perhaps the board is proceeding on the very reasonable assumption that it is beyond its power to get at all the facts in the short space of time it can devote to the matter, and thinks it best to err on the side of liberality if it has to err at all.

We know not on what grounds, either of principle or of policy, it can be maintained that the city ought not under any circumstances to contribute to the maintenance of institutions that are not under its own control and management. The condition of things in New York is this: There are a few charitable institutions managed directly by city officials; some of them are large and they are all very important, but they do not compare in extent or in variety of scope with the aggregate of the charitable institutions that are largely maintained by private contributions and entirely administered by persons who do not derive their authority from the city. Consequently, if the city decided that it would no longer contribute to the support of the private institutions, either it would have to lavish amounts unnecessarily large on its own charities, or it would have to make itself conspicuous among municipalities by its niggardliness—and New York is not stingy, whatever else it may be—or it would have to acquire ownership of the existing private charities or duplicate many of them. We do not see that any one of these results is desirable.

At the same time, it must be admitted that the task of apportioning the city's contributions among the private institutions on a just and equitable basis is not an easy one, not one that the board of apportionment ought to be expected to perform satisfactorily in the light only of precedent and the chance impressions made on its members by printed reports and by such oral contention as was indulged in at the hearing. Perhaps the Hospital Saturday and Sunday Association could furnish the board with the most trustworthy data to go upon, at least as regards the larger hospitals, and we have no doubt that it would give information cheerfully.

VENEREAL BUBO IN THE MEDIAN LINE.

In 1893 M. Molinié published in the *Midi médical* an account of a case of what he called medio-suprapubic chancroidal adenitis (*adénite chancrelleuse médiosuspubienne*). The case was observed in Professor Audry's clinic, in Toulouse. Molinié explained it by the suggestion that the man who was the subject of the bubo had a lymphatic gland in that abnormal situation, a gland, moreover, that received lymphatic vessels from the penis. In the *Presse médicale* for November 27th M. Casteret, a medical officer of the French army, cites Molinié's case as the only one that he has been able to find on record, and gives the history of a case of his own that he considers parallel. The nature of the adenitis, if adenitis it was, seems somewhat open to doubt, however.

The man had a single sore in the balano-preputial furrow, on the right side. It had appeared six days after coitus, and it had all the characteristics of a soft chancre. Eight days after the appearance of the sore the man noticed a swelling in the left groin, but it was not till a week later that he presented himself for inspection. At that time the bubo was voluminous and seemed to fluctuate a little. Six days later it was opened by a small incision, the contents were thoroughly squeezed out, the cavity was washed out with corrosive sublimate, and iodoformed vaseline was injected into it. In four days more the man was supposed to be cured; the bubo had practically disappeared and firm pressure did not force anything from the opening. However, a swelling was noticed in the median line, about an inch and a half from the root of the penis. Palpation revealed a pasty induration having the dimensions of a large almond, somewhat painful, situated immediately above the pubic arch. In spite of the patient's having absolute rest in bed, the swelling increased in size, the skin over it became red and hot, and fluctuation was very plain. Notwithstanding the situation of the mass, M. Augé and M. Petit, fellow-officers with the author in the medical corps, concurred in his opinion that it was a bubo. They were about to open it when the patient informed them that during the night there had been an escape of pus from the inguinal bubo, and it was found that pressure on the median swelling caused pus to issue from the inguinal incision; so the suprapubic abscess was not opened at that time, but two days later, as it had not diminished in size, and the redness of the skin remained the same, it was incised and treated like the first one. An odorless liquid of the color of *café au lait* came from it. When the corrosive-sublimate solution was thrown into it it was distended to the size of an egg, and then the inguinal bubo, which had been reduced to the size of a small almond, began to swell and liquid issued from its orifice. It was plain that the two cavities communicated with each other.

To sustain his opinion that the median-line abscess was a true bubo, and not the result of infection from the first one, M. Casteret urges that its outline was so rounded from the start, that its cavity was so well defined, and that the character of the pus from it was such as to warrant his belief. He suggests that there was an anastomosis between the inguinal ganglia and this abnormally situated suprapubic gland. This supposition, he remarks, may appear fantastic, but he insists that it is plausible in view of the fact that the lymphatic glands show less anatomical uniformity than any other organs of the body, varying both in number and in situation. We must, however, confess to some skepticism as to the nature of the second abscess in this case.

MINOR PARAGRAPHS.

TOBACCO AMBLYOPIA IN HORSES.

At a recent meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia Dr. de Schweinitz stated that Dr. Barrett, of Melbourne, had described a form of amblyopia in horses which was attributed to their eating some plant, probably the Australian tobacco plant. By the courtesy of Dr. Barrett Dr. de Schweinitz was enabled to exhibit two slides which Dr. Barrett had prepared from the optic nerves of a horse which had become blind. One of these sections, originally stained with carmin, had been removed by Dr. de Schweinitz from the slide and re-stained by the Weigert method. The section was composed of about a hundred nerve bundles, some of which showed distinct signs of disease—namely, a species of fibrosis which separated, pressed upon, and destroyed the individual nerve fibres. This was a marked phenomenon in several of the bundles and less apparent in others. The Weigert section confirmed, in great measure, the observations already made by Dr. Barrett, who also found atrophy of the nerve fibres, but who did not describe abnormal development of connective tissue. It appeared exactly to coincide with the observations of Dr. Tidswell, who described the condition as one of progressing fibrosis with some degeneration of the nerve fibres.

UNILATERAL SUPPRESSION OF LACRYMATION.

Dr. Embden reported at a recent meeting of the Berlin Medical Society (*Gazette hebdomadaire de médecine et de chirurgie*, November 11th) the case of a little girl, four years old, who had been admitted into a hospital suffering with a fracture of the cranium. She recovered with right facial paralysis in which the palate was involved. At the time of her leaving the hospital there was paralysis of the three branches of the right facial nerve, with phenomena of degeneration. When the child cried, tears flowed only from the left eye, while the right eye, in which the lacrymal secretion appeared normal when she was not crying, remained dry. Moreover, the reddening of the face and the increased nasal secretion incident to crying were restricted to the healthy side. The case was thought to support Goldzieher's theory of the facial as a secretory nerve.

THE NEW VOLUME OF THE *INDEX-CATALOGUE.*

Volume ii of the second series of the *Index-Catalogue of the Library of the Surgeon-General's Office*, which carries the vocabulary from B to Bywater, shows that under Deputy Surgeon-General Huntington's direction the same care is taken in the preparation of the volumes of the new series of this important publication as was shown in that of the preceding series. It contains the second addition to the alphabetical list of abbreviations of titles of medical periodicals published in volume xvi. In these lists, as is well known, a work consisting of more than one volume and published a volume at a time is counted as a "periodical." In the new list we find the titles of eight such works in a total of somewhat over two hundred.

THE INFLUENCE OF THE THYREOID GLAND ON METABOLISM.

Schöndorff (*Archiv für die gesammte Physiologie*, lx; *Fortschritte der Medicin*, November 1st) has made long-continued experiments on a dog, and he finds that feeding with the thyreoid gland or its active principle, Baumann's thyreoiodinin, exerts a decided influence on metabolism. There is loss of weight, but the albumin of the body is not attacked until the fat is all used up. At first the elimination of nitrogen is greater than its ingestion. This the author explains by the excretion of urea and other nitrogenous bodies stored up in the organism and eliminated at once under the influence of the thyreoid gland. This accounts for the increased elimination of nitrogen observed by authors who have made experiments of only a few days' duration on the human subject.

THE THYREOID GLAND IN JAUNDICE.

Lindemann (*Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, cxlix; *Ga-*

zette hebdomadaire de médecine et de chirurgie, November 28, 1897) has observed in four persons who had died with symptoms of obstructive jaundice due to cancer of the ductus choledochus communis signs of an excessive amount of colloid material in the thyreoid gland. He concludes that in those cases, the antitoxic function of the liver having been notably impaired, the thyreoid was excited to vicarious action by the toxic substances circulating in the blood.

THE DIAGNOSIS OF INTESTINAL WORMS WITHOUT AN EXAMINATION OF THE STOOLS.

The Quebec *Revue médicale* for December 1st credits the *Presse médicale* with an article in which it is stated that, according to De la Feuente, there are two signs by which one may diagnosticate intestinal helminthiasis without examining the stools. One of them is the occurrence of colicky attacks of a very particular kind. They come on with great suddenness, seizing the child in the midst of its play, they are quite severe at the very outset, and they are confined to one part of the abdomen—all the rest of it may be palpated without causing the patient the slightest pain, but the moment the seat of the colic is touched the child will cry. The second sign is bilateral narrowing of the visual field, usually so pronounced as to be detected by passing a finger to and fro before each of the patient's eyes. This second sign, of course, can be turned to account only in the case of children who have attained to certain years.

THE MANAGEMENT OF THE ARM AFTER AMPUTATION OF THE BREAST.

At a recent meeting of the Medical Society of London (*Presse médicale,* November 20th) Mr. Cotterell gave it as his opinion that it was not best to secure the arm to the body, but, on the contrary, to keep it at a right angle with the trunk by means of a suitable apparatus. In support of his view he presented a patient who had undergone amputation of the breast with excision of the pectoralis major. She could dress her own hair, and there were thus far no signs of cicatricial retraction.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 14, 1897:

DISEASES.	Week ending Dec. 7.		Week ending Dec. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	50	11	42	8
Scarlet fever	146	9	190	11
Cerebro-spinal meningitis	0	0	0	0
Measles	277	19	302	12
Diphtheria	179	24	148	28
Croup	6	6	6	5
Tuberculosis	212	81	204	94

The Hospital for Scarlet-fever and Diphtheria Patients—It is announced that this hospital will be opened on or about December 29th. It is intended for pay patients, and is situated at the foot of East Sixteenth Street, facing the East River. The hospital is a private corporation, controlled by its own board of governors, and is not connected with any other institution. The president of the board of health and one of the health commissioners are *ex officio* members of the board. The charges for rooms will be from thirty to fifty dollars a week, nursing and services of the resident physician being included. Patients may be attended by their own physicians if it is so desired. Patients intended for the hospital must not be removed from their apartments until the hospital authorities have been communicated with (telephone call, 2880 Eighteenth Street) and the requirements of the board of health complied with. The hospital has its own ambulance and coupé service. The visiting physicians are Dr. L. E. Holt, Dr. W. H. Katzenbach, Dr. George M. Swift, Dr. F. M. Crandall, Dr. W. K. Draper, and Dr. R. J. Carlisle. The consulting physicians are Dr. E. G. Janeway, Dr. A. Jacobi, Dr. W. H. Draper, Dr. R. H. Derby, Dr. F. P. Kinnicutt, Dr. A. A. Smith, and Dr. J. W. Brannan. The consulting laryngologist is Dr. H. H. Curtis. The resident physician is Dr. E. L. Dow.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague were received in the office of the supervising surgeon general during the week ending December 11, 1897:

Yellow Fever—United States.

New Orleans, La	Nov. 28–Dec. 4	5 cases,	3 deaths.

Yellow Fever—Foreign.

Para, Brazil	Oct. 27–Nov. 6	2 cases.	
Rio de Janeiro, Brazil	Nov. 14–20	5 "	
Havana, Cuba	Nov. 26–Dec. 2		10 deaths.
Manzanillo, Cuba	Nov. 1–15		4 "
Regla, Cuba	Nov. 26–Dec. 2		10 "
Kingston, Jamaica	Nov. 14–20	6 "	2 "
Manchester, Jamaica	Nov. 14–20	5 "	
St. Andrew, Jamaica	Nov. 14–20	1 case.	
St. Catherine, Jamaica	Nov. 14–20	1 "	
Mazatlan, Mexico	Nov. 18	Yellow fever reported.	
San Salvador	Nov. 1	Yellow fever reported.	
Cartagena, U. S. of Colombia	To Nov. 6	12 cases,	1 death.

Cholera.

Bombay, India	Oct. 27–Nov. 9		24 deaths
Calcutta, India	Oct. 17–30		18 "
Yehime Ken, Japan	Oct. 29–Nov. 8	2 cases.	

Plague.

Bombay, India	Oct. 27–Nov. 9		97 deaths.

Smallpox—United States.

Birmingham, Ala	Nov. 28–Dec. 4	13 cases.	
Atlanta, Ga	To Nov. 30	102 cases,	1 death.
Griffin, Ga	To Dec. 2	19 "	1 "

Smallpox—Foreign.

Prague, Bohemia	Nov. 7–13	9 cases.	
Manaos, Brazil	Oct. 10–30	10 "	3 deaths.
Hong Kong, China	Oct. 31–Nov. 6	5 "	1 death.
Cienfuegos, Cuba	Nov. 22–28		3 deaths.
Sagua la Grande, Cuba	Nov. 21–27	38 "	7 "
Bristol, England	Nov. 14–20		1 death.
Southampton, England	Nov. 7–20	3 cases.	
Paris, France	Nov. 14–20		1 "
Gibraltar	Nov. 15–21	1 case.	
Akita Ken, Japan	Oct. 29–Nov. 8	1 "	
Chiba Ken, Japan	Oct. 29–Nov. 8	1 "	
Fukushima Ken, Japan	Oct. 29–Nov. 8	1 "	
Kagoshima Ken, Japan	Oct. 29–Nov. 8		1 "
Miyagi Ken, Japan	Oct. 29–Nov. 8	1 "	
Nugata Ken, Japan	Oct. 29–Nov. 8	5 cases,	1 "
Osaka Fu, Japan	Oct. 29–Nov. 8	1 case.	
The Hokkaido, Japan	Oct. 29–Nov. 8	37 cases,	11 deaths.
Yehime Ken, Japan	Oct. 29–Nov. 8	2 "	
Odessa, Russia	Nov. 14–20	3 "	1 death.
St. Petersburg, Russia	Nov. 7–13	8 "	3 deaths.
Warsaw, Russia	Nov. 7–13		4 "

The Midland Ophthalmological Society of Kansas City.—At the last regular meeting, on Monday evening, the 13th inst., the programme included the following papers: Toxic Amblyopia, by Dr. W. F. Lippitt, of the army; General Medicine in Ophthalmology, by Dr. J. E. Minney, of Topeka; A Case of Traumatic Enophthalmus, the Result of Gouging, by Dr. David Webster, of New York; and A New Operation for Symblepharon, by Dr. J. M. Banister, of the army.

The Eastern Medical Society.—At the annual meeting the following officers were elected for the ensuing year: President, Dr. William S. Gottheil; vice-presidents, Dr. A. Isaacs and Dr. E. K. Browd; treasurer, Dr. B. Gordon; chairman of the committee on admission, Dr. S. Schaie; recording secretary, Dr. R. Abrahams.

The Buffalo Academy of Medicine.—At the last regular meeting, on Tuesday evening, the 14th inst., the following papers were to be read: Lavage of the Stomach, followed by Peripheral Neuritis (including Optic Neuritis) and a Peculiar Œdema, by Dr. J. C. Clemesha; and The Jew in Medicine, by Dr. Julius Ullman.

The Society of Alumni of the City (Charity) Hospital.—At the meeting of December 8th officers were elected as follows: President, Dr. Walter B. Johnson; vice president, Dr. William Leland Stowell; secretary, Dr. Charles J. Proben; treasurer, Dr. Henry H. Schroeder; editor, Dr. A. T. Muzzy.

The Craig Colony for Epileptics.—Dr. Marie Louise Benoit has been appointed a medical interne.

The Western Surgical and Gynæcological Association.—The seventh annual meeting will be held in Denver on December 28th and 29th, under the presidency of Dr. Joseph Eastman, of Indianapolis.

The Death of Professor Tarnier, of Paris, the illustrious obstetrician, occurred recently. He was in his seventy-first year.

Change of Address.—Dr. Charles E. Hirsh, to No. 262 East Seventy-eighth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 5 to December 11, 1897:*

Brewer, Madison M., Captain and Assistant Surgeon, is granted leave of absence for four months from the date of his departure from Fort Keogh, Montana.

Owen, William O., Captain and Assistant Surgeon, is granted leave of absence for one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending December 4, 1897:*

White, S. S., Passed Assistant Surgeon. Detached from the Concord and ordered to the Wheeling.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Fourteen Days ending December 9, 1897.*

Murray, R. D., Surgeon. To assume command of Camp Fontainebleau, Mississippi, in addition to other duties. December 3, 1897.

Vansant, John, Surgeon. Upon being relieved from duty at Wilmington, N. C., to proceed to Charleston, S. C., and assume command of service. November 30, 1897.

Austin, H. W., Surgeon. To rejoin station at Boston, Mass. November 26, 1897.

Peckham, C. T., Passed Assistant Surgeon. Upon being relieved from duty at Detroit, Mich., to proceed to Vineyard Haven, Mass., and assume temporary command of service during absence on leave of Passed Assistant Surgeon W. J. S. Stewart. December 7, 1897.

Glennan, A. H., Passed Assistant Surgeon. To report at bureau on or about January 5, 1898, for temporary duty in Hygienic Laboratory. December 2, 1897.

Brooks, S. D., Passed Assistant Surgeon. To assume command of Port Townsend Quarantine on or about December 26, 1897, in addition to other duties. December 3, 1897.

White, J. H., Passed Assistant Surgeon. To assume charge of post-epidemic disinfection in Mississippi. December 1, 1897.

McIntosh, W. P., Passed Assistant Surgeon. Relieved from duty at St. Louis, Mo., and directed to rejoin station at Louisville, Ky. December 1, 1897.

Magruder, G. M., Passed Assistant Surgeon. Granted fifteen days' extension of leave of absence on account of sickness. December 1, 1897. Upon expiration of sick leave, to proceed to Memphis, Tenn., and assume command of service. November 27, 1897.

Woodward, R. M., Passed Assistant Surgeon. To proceed to Philadelphia, Pa., and report to commanding officer of that station for temporary duty. December 7, 1897.

Cobb, J. O., Passed Assistant Surgeon. Relieved of command of Camp Fontainebleau, Mississippi. December 3, 1897. Upon being relieved from duty at New York, to proceed to Detroit, Mich., for duty and assignment to quarters. December 7, 1897.

Wertenbaker, C. P., Passed Assistant Surgeon. Upon being relieved from duty at Delaware Breakwater Quarantine, to proceed to Wilmington, N. C., and assume command of service. November 30, 1897.

Smith, A. C., Passed Assistant Surgeon. To report at bureau on or about January 5, 1898, for temporary duty in Hygienic Laboratory. December 2, 1897.

Young, G. B., Passed Assistant Surgeon. Granted leave of absence for two weeks on account of sickness. November 29, 1897. Upon expiration of sick leave, to proceed to Delaware Breakwater Quarantine Station and assume command of service. November 27, 1897.

Stimpson, W. G., Passed Assistant Surgeon. Upon being relieved from duty at Port Townsend Quarantine Station, to proceed to St. Louis, Mo., and assume temporary command of service. December 2, 1897.

Stewart, W. J. S., Passed Assistant Surgeon. Granted leave of absence for one month from December 22, 1897. December 7, 1897.

Gardner, C. H., Passed Assistant Surgeon. To assume temporary command of Cape Charles Quarantine Station on December 14, 1897, in addition to other duties. December 1, 1897.

Cumming, H. S., Assistant Surgeon. Upon being relieved from duty at Philadelphia, Pa., to proceed to New York for duty and assignment to quarters. December 7, 1897.

Greene, J. B., Assistant Surgeon. To report to Chief of Revenue Cutter Service for assignment as medical officer on Revenue Steamer McCulloch. November 27, 1897.

Grubbs, S. B., Assistant Surgeon. To proceed to New York for duty and assignment to quarters. November 27, 1897.

Russell, H. C., Assistant Surgeon. Upon being relieved from duty at New York, to proceed to Boston, Mass., for duty and assignment to quarters. November 27, 1897.

Society Meetings for the Coming Week:

Monday, *December 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

Tuesday, *December 21st:* New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chautauqua (semiannual), Kings (Lewis—semiannual), and Onondaga (semiannual—Syracuse), N. Y.; Baltimore Academy of Medicine.

Wednesday, *December 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *December 23d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *December 24th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *December 25th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

DORRESTEIN—EISENHAUER.—In New Orleans, on Thursday, December 9th, Dr. C. A. M. Dorrestein and Miss Lillian Eisenhauer.

HYDE—BRISTOL.—In Port Henry, N. Y., on Sunday, December 12th, Dr. Melvin C. Hyde, of Isle Lamotte, Vermont, and Mrs. Katherine Bristol.

MEARS—SYKES.—In New Haven, on Thursday, December 9th, Dr. Frank Sherman Mears and Mrs. Alice Mary Sykes.

Died.

BURDICK.—In Winooski, Vermont, on Saturday, December 11th, Dr. Lafayette Burdick, in the seventy-third year of his age.

CRUIKSHANK.—In Alexandria, Louisiana, on Sunday, December 5th, Dr. James A. Cruikshank, in the fifty-eighth year of his age.

DALE.—In Dale, Mississippi, on Tuesday, December 7th, Dr. H. H. Dale, in the seventy-third year of his age.

HOITT.—In Manchester, New Hampshire, on Thursday, December 9th, Dr. George C. Hoitt, aged sixty-two years.

MCKEE.—In Butler, Pennsylvania, on Saturday, December 11th, Dr. James Cooper McKee, United States Army, retired, in the sixty-eighth year of his age.

WELCH.—In Sutton, Massachusetts, on Tuesday, November 30th, Dr. Edward A. Welch, aged thirty-five years.

WILSON.—In Dallas, Texas, on Wednesday, December 8th, Dr. William R. Wilson.

Letters to the Editor.

ACTINOMYCOSIS IN MAN.

NO. 953 MADISON AVENUE, BALTIMORE, *December 7, 1897.*

To the Editor of the New York Medical Journal:

SIR: Will you permit me to make use of the columns of your journal to obtain information concerning the occurrence of actinomycosis hominis in America?

I have collected all the published cases and feel sure that others have been observed. I shall be grateful for full notes on these cases.

In addition to the general description, I should like to know at what time the organism was observed, what the surgical and medical treatment was, and the result.

I should also like any notes on cases already published where further developments have occurred. Of course full credit will be given the observers when the collected cases are reported. JOHN RUHRÄH, M. D.

WHAT A FLANNEL BANDAGE MAY DO.

TITUSVILLE, PA., *November 26, 1897.*

To the Editor of the New York Medical Journal:

SIR: On Monday, November 15th, I was called to see a primipara, aged twenty years, in labor. The labor was a rather quick and easy one. The child weighed seven pounds and a half. The next day both mother and child were doing well. At twelve o'clock that night, or twenty-four hours after the delivery, I received a telephone call to come at once. Upon my arrival I was told that blood-poisoning had set in and was shown a large, irregular-shaped spot upon the abdomen. The spot was of a dark bluish color, very sensitive to the touch, and measuring perhaps seven inches in diameter. The patient complained of terrible pain over the region of discoloration. The pulse and temperature were normal.

Upon a close examination I discovered that she had used a flannel bandage with the maker's stamp on one end. The use of warm water and soap was followed by instantaneous and complete recovery.

PRESTON STEELE, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of October 13, 1897.

The President, Dr. BROOKS H. WELLS, in the Chair.

Report and Exhibition of Surgical Cases.—Dr. J. B. BISSELL said that he had arranged to have present seven or eight patients, but, unfortunately, one, a little boy with an amputation near the shoulder joint, had been seized with fever due to enteritis, and another, a man of twenty-one, had been discharged from the hospital the day before. The latter's case would have been interesting in conjunction with the boy's, from the fact that it had been a traumatic amputation due to an elevator accident. He had lost a great deal of blood when he came into the hospital, and there had been a delay from four till eleven o'clock to get permission to amputate. The man had been excessively anæmic, and in bringing him from the ward to the operating room the nurse had been careless, and he had lost pretty nearly all the rest of the blood that had been in his body. When he left the table the speaker had thought he was dead. They had snipped off the remaining soft parts and closed the flaps with two or three sutures. No precautions about sepsis had been taken; it had only been hoped that he would survive, and precautions would be used later. Hypodermics of saline solution had been put in the other arm and into the legs, and later on a fountain syringe had been used, and about two quarts had been put in this way through the tissues, not into the veins; using the other means for relieving excessive hæmorrhage—hot saline solutions thrown into the rectum, elevation of the bed, etc. The man had pulled through, had had a slight sloughing of the tissues of the stump, and there had been a temperature over 101° F. one day only.

The case of the little boy had been somewhat similar, without the hæmorrhage. His arm had been amputated and he had done well, without a rise of temperature above 99°. The operation had been done rather hurriedly, but with more antiseptic precautions than in the other case, because the condition had not been so hopeless.

The next case which he showed was that of a man, V. T., twenty-one years of age, who, when two years old, had fallen from a height of three stories. He had had a compound fracture of the skull and deep wounds on the neck and the side of the face. These wounds had been allowed to granulate, and when he came into the hospital he had come more for treatment for cosmetic conditions than anything else. In the first operation a scar an inch and a quarter in one direction and an inch in another had been operated on. A large oval cut had been made on both sides around the scar, which had been removed and the wound sutured. In the second operation, two weeks later, a scar three fourths of an inch in one direction and an inch and a half in the other had been removed. These two scars had been very unsightly, and deformed this side of his face badly. Now, as was seen, he had two linear scars from which the discoloration which was now present would gradually disappear. On the neck he had a scar which was very much less in extent, and the speaker advised him not to have anything done to it.

The next case was that of T. K., a laborer, twenty-eight years old, who had been run over on September 9th by a loaded truck. The wheel had run across his neck, chest, and arm. The radius of the forearm and the ribs of the left side had been fractured. The lacerated point in the arm had been sewed up, and the next day emphysema had appeared in the arm and body, extending into the tissues of the neck and the arm of the opposite side. Cellulitis of the arm had developed. It had been opened and washed out with bichloride solution. In two weeks he was attacked with salivation, which had taken two weeks to cure. As soon as this had come on, the bichloride had been abandoned and the saline solution had been used instead. For a week or ten days his condition had been quite critical, so much so that no attention had been paid to the fracture of the radius, and it was badly united. There was fibrous union and well-marked deformity, but for that something could be done later. The speaker was content to get this man well from the frightful condition he had been in without any regard to the fracture of the arm. The broken ribs had healed.

He reported another case, which was to have been shown here to-night, the result of a football accident. A young man of nineteen had been injured while playing football about two weeks before, and when he had been picked out of the scrimmage his hand had been found rotated so that the axis of the hand was across the axis of the forearm, the palm looking upward. It had been reduced by some of his colleagues in the football game and he had gone on playing for a while, but the pain had been so excessive that a doctor had been called. He had been treated for a sprain. Two or three days after the dressing had been put on an X-ray photograph had been taken. It showed very prettily a separation of the epiphysis, and it had occurred to the speaker that possibly a good many of these troublesome sprains in young people might be separation of the epiphysis.

Dr. **Adolph Rupp** asked, in relation to the first case, within what number of minutes or hours the two quarts of water had been injected.

Dr. **Bissell** said, three hours in all. The hypodermics had been given every few minutes. They would have given an intravenous injection if they had been ready for it, but as it was, they had used a large hypodermic to all parts of the body.

Dr. A. T. **Muzzy** said he was surprised, in the case of plastic operation upon the face, that, after stretching the face in one way vertically. Dr. Bissell had such evident success in stretching the same tissues in a different direction.

Dr. **Bissell** stated, as to the case of plastic operation on the face, that the first operation had been done two weeks before the other.

The **President** asked what Dr. Bissell expected to do with the ununited fracture of the third case.

Dr. **Bissell** said, in regard to the deformity of the forearm, he thought they would break it up and straighten it out under ether anæsthesia, and possibly might have to cut down on it and take off a piece of the bone.

Dr. **Rupp** asked how strong the bichloride solution had been.

Dr. **Bissell** said it had been 1 to 5,000, but it had been used pretty copiously; they used it in hospitals as if it was water. There had been several openings, and a good deal of the solution had got in. The cellulitis had been very severe and the emphysema pretty bad.

The **President** thought a point that might well be questioned was the use of any poisonous antiseptic for any length of time in washing out large fistulous and granulating tracts. There was danger of serious poisoning from bichloride, carbolic acid, large amounts of iodoform, or any of the poisonous drugs. It would be safer and equally efficacious in most instances to use plain boiled water, salt solution, or something non-toxic, such as peroxide of hydrogen.

Dr. **Muzzy** said that about the conjunctiva he hesitated very frequently to use the bichloride solutions, because they were irritating locally.

Dr. **Bissell** said that he had seen a good deal of poisoning from bichloride-of-mercury irrigation, but few poisonous drugs were used now. He had never seen any bad effect from acetanilide. In a case of carbuncle, which he had meant to present at this meeting, there had been twelve or fifteen inches in each direction, above and below, of granulating surface, in which acetanilide powder had been used in large quantity with no serious symptoms due to this drug. He had read several reports of poisoning, but had never seen it. Carbolic-acid poisoning he had seen several times, but never serious. He had seen a good many cases like that of the man presented who had nearly died.

(To be continued.)

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 3, 1897.

The President, Dr. Robert J. Carlisle, in the Chair.

Case showing the Result of Resection of the Rectum for Anal Fistulæ.—Dr. **Frederick Holme Wiggin** presented such a case. The patient, J. N., thirty-eight years of age, had been admitted to the gynæcological ward of the City Hospital on December 20, 1896. Fourteen years previously she had had syphilis, and a year later abscesses had formed in both buttocks. Two operations had been performed on her, but both had been unsuccessful. When he had first seen her the condition had already existed eight years. At that time she had been in a pitiable condition, the buttocks being so indurated and inflamed that she could not sit down with comfort, and there had been sinuses which had opened in either buttock and in the left labium majus, discharging gas and fæcal matter. He had injected hydrozone into each of the external openings of these sinuses, having first placed a small Sims's speculum in the rectum, and had been able to locate the internal openings, which were from one to three inches from the sphincter, by the escape of gas. Laying open the sinuses would have been too extensive an operation, and hence it had been decided to resect the diseased portions of the bowel and bring down the healthy part of the gut and attach it to the skin, and so shut off the fæcal matter from the sinuses. In doing this operation he had first divided the perinæum and secondly the tissues lying between the posterior margin of the anus and the coccyx, and with the aid of heavy silk sutures, the ends being left long and placed on either side, the parts had been retracted and the diseased bowel had been dissected out and about three inches of it had been amputated, and finally he had attached the margin of the healthy gut to the skin and closed the perineal wound, leaving the wound posterior to the gut open with gauze in it. The latter gradually healed by granulation. A few weeks later he had freely incised the sinuses in the buttocks, and had found large cavities separated by bands. These bands had been broken down so as to convert these cavities into one large cavity, which was curetted. The whole wound had then been swabbed out with pure carbolic acid and carefully dressed so as to secure healing from the bottom. The sphincter had been divided above and below, and there had been in consequence a good deal of prolapse of the mucous lining of the bowel. To overcome this, he had endeavored to produce a moderate stricture of the bowel by repeated applications of the Paquelin cautery. The woman had been discharged from the hospital last August, and at the present time there was good control of the bowel.

Dr. Robert T. Morris said that so far the result seemed to be very excellent, and if it was as good after three years the case would be quite a remarkable one. The danger was from slow cicatricial contraction, and he would like to know what operation Dr. Wiggin proposed to do to remedy this should it occur. He also asked if he had had any experience with the method of twisting the rectum upon itself one or one-and-a-half times and suturing it to the skin for the purpose of giving control of the bowel movements. It was theoretically a good operation, but in two cases in which he had tried it the sutures had not held the bowel in the twisted position.

Dr. Parker Syms said that an anus from which the sphincter muscle had been lost was never able to control diarrhœal or fluid evacuations, although it might be entirely competent to control solid fæcal matter. He would expect it to be very difficult to get proper union in the operation alluded to by the last speaker, owing to the interference with the circulation of the parts caused by the twisting of the bowel.

Dr. Wiggin said that he had had no experience with this twisting method. The reason he had followed the line of procedure that he had described was that at the end of the operation, as a result of rather free hæmorrhage, the patient had been in such a bad condition that he had felt justified in taking some risks about the control of the bowel. If the tissues continued to contract until trouble arose from that source he would be inclined to free the bowel again, and perhaps pass it through an opening in the gluteal muscles on one side. He expected to be able to keep this patient under observation for a long time, and therefore hoped that he could make a later report on the case.

(*To be continued.*)

Book Notices.

Traumatic Injuries of the Brain and its Membranes. With a Special Study of Pistol-shot Wounds of the Head in their Medico-legal and Surgical Relations. By Charles Phelps, M. D., Surgeon to Bellevue and St. Vincent's Hospitals. With Forty-nine Illustrations. New York: D. Appleton and Company, 1897. Pp. xiv–582. [Price, $5.]

Few surgeons have had so extensive an experience in the observation and treatment of head injuries as the author of this treatise. Certainly none have used their experience to greater advantage.

In reading this interesting and instructive work upon the traumatic injuries of the brain, based upon the personal observation of five hundred cases, one is forcibly impressed with the remarkable care which has been exercised in recording these cases, as well as the conservative and logical manner in which the symptoms have been analyzed.

As the writer states in the preface, it is a department of surgery of the greatest practical importance and one which has not, up to the present time, received the attention it deserves.

In his preliminary remarks upon fractures of the skull and their complications the author seeks to establish a distinction between the symptoms due to fracture *per se* and those due to the various injuries of the brain and its coverings, which so frequently complicate these fractures.

The old and vague terms concussion and compression, under which nearly all the symptoms due to brain injury were formerly grouped, have been entirely discarded, and a new and thoroughly scientific nomenclature has been adopted.

Chapter i deals with the pathology of brain injuries and the secondary inflammatory processes so often associated with these conditions. From a careful study of two hundred and twenty-five autopsies the author concludes that the injuries to the brain occasioned in this manner may be classified as hæmorrhages, sinus thromboses, contusions, and lacerations, and that the inflammatory conditions may give rise to meningitis, abscess, softening, necrosis, and atrophy.

Although several of these lesions are generally found to be associated in any given case, in considering the subject of symptomatology the author has grouped the cases into a number of classes, each one of which contains all the cases shown by autopsy or operation to present a given predominant lesion; then, by a careful comparison of the clinical history of each case with the autopsy findings, he is able to arrive at some definite conclusions regarding the symptoms to which each of these lesions gives rise. This work has been done evidently with the greatest care, and the results are such as to call for a very decided rearrangement of our ideas regarding the significance of certain well-known symptoms. For instance, it has for many years been very generally believed that hæmorrhages of any considerable extent, causing pressure on the brain, would be indicated by a dilatation of the pupil on the side corresponding with the lesion, whereas by a comparison of the ocular symptoms and the autopsy findings in a large number of instances the author has shown that this symptom can rarely be relied upon to indicate either the presence or the situation of a hæmorrhage, but is, in all probability, due to an entirely different lesion.

A number of other instances could be mentioned in which this careful comparison of the clinical and post-mortem conditions effectually disposes of theories which have long been held by the majority of observers.

In chapter iii the author has given the results of some interesting observations which tend to show that injuries of the left frontal lobe alone give rise to loss or disturbance of the intellectual faculties. In this chapter we also find recorded a number of observations upon the symptomatology of comparatively limited injuries of the pons, medulla, corpus striatum, and optic thalamus.

In a systematic reading of the book up to this point, while we can not fail to be greatly impressed with the accurate observations of the writer and the logic of his conclusions, there is a feeling of discouragement at the complexity and great variability of the symptoms in cases presenting nearly similar lesions. This feeling, however, is to a great extent dispelled on reading chapter iv, which deals with so-called "differential" diagnosis. It is in this chapter that the author has given us the most valuable results of his research. It is a chapter which will be found to be of the utmost practical value to all who are in search of definite indications upon which to base their prognosis and treatment.

Chapters v and vi are devoted to prognosis and treatment, and in both of them the author shows his conservatism. It is to be regretted that he did not introduce some specific directions regarding operative technics, as the book will undoubtedly be extensively employed as a book of reference by general practitioners and others not thoroughly familiar with such procedures.

In Part Second the author devotes one hundred and fifty-five pages to a consideration of pistol-shot wounds of the head. This subject is treated both from the medico-legal and from the surgical point of view.

A large number of experiments were made upon the cadaver with weapons of varying calibre and under varying conditions, and the results have been analyzed with a view to determining the value of expert testimony in cases of this kind. This part of the work is admirably illustrated by forty-one full-page pictures which were taken from unusually good photographs.

The work closes with a record of some three hundred condensed clinical histories.

As a whole, we regard the book as a valuable contribution to surgical literature. We are, however, inclined to question the importance which the author ascribes to contusions of the brain and its membranes, and are disappointed that he does not give more attention to the influence of alcoholism, uræmia, and toxæmia from other causes, which are so often present in grave surgical disorders and often influence their symptoms to a very considerable extent. We also can not agree with the author that suspended consciousness following head injury necessarily means structural change. Several other statements of minor importance might also be criticised if the book was viewed from a neurological or a strictly pathological point of view, but, as the work was written by a practical surgeon for surgeons and general practitioners, we feel that we are fully justified in regarding it as probably the most important American contribution to the subject of head injuries that has yet appeared.

Clinical Diagnosis. The Bacteriological, Chemical, and Microscopical Evidence of Disease. By Dr. RUDOLPH v. JAKSCH, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic, in the German University of Prague. Translated from the Fourth German Edition and enlarged by JAMES CAGNEY, M. A., M. D., member of the Royal College of Physicians of London, etc. Third Edition. With Numerous Illustrations partly in Colors. London: Charles Griffin and Company, Limited, 1897. Pp. xxv–523. [Price, $6.50.]

THE *Clinical Diagnosis* of von Jaksch is so well known that any detailed discussion of its merits is superfluous. In looking over the present volume the reader is struck by the immense amount of literary research which has gone toward its preparation. Its pages are profusely peppered with the italicized names of those whose writings have been consulted, and sixty-two pages are devoted to bibliographies, of which there are nearly two thousand figured, each number representing from one to twenty names.

The translator has added much matter in brackets, which adds materially to the value of the work as a book of reference, for such it must be considered. It is not adapted to the man who desires plain and explicit directions for practical clinical work. It is too encyclopædic for such purposes. For everyday use Simon's book is much better.

The color-analysis of the blood, as treated in this volume, is not satisfactory, and does not compare with American writings upon the same subject. For instance, Ehrlich's exploded theory that eosinophile cells are indicative of leucæmia is not definitely contradicted, and the early nomenclature of the various forms of leucocytes is retained. Nevertheless, von Jaksch's *Diagnosis* is a classic.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. For Students, Hospital Physicians, and Practitioners. By CHARLES E. SIMON, M. D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore, etc. Second Edition, revised and enlarged. With One Hundred and Thirty-three Illustrations on Wood and Fourteen Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xx–17 to 563. [Price, $3.50.]

THIS book thoroughly deserves its success. It has received considerable revision, bringing it up to date, the number of cuts has been increased, and fifty pages have been added to its bulk.

The first edition having been already reviewed in these columns, it is simply necessary to reiterate that the work is a very complete, authentic, and useful manual of the microscopical and chemical methods which are employed in diagnosis.

It deals with the technics and diagnostic value of the findings in the examination of the blood, saliva, gastric contents, fæces, nasal secretions, sputum, urine, transudates and exudates, cystic contents, cerebro-spinal fluid, semen, vaginal discharges, and milk.

We desire to mention with particular approbation a modification of Heller's test suggested by Simon in the first edition, which, as the author states, is apparently trivial, consisting in the use of a two-ounce conical glass instead of a test tube. Nevertheless, as it permits of the accurate detection of albumin, an excess or deficiency of urea, a large increase of indican, and the presence of bilirubin, it has proved of much value in rapid routine clinical work. Very excellent colored plates illustrate this point. The volume is well worth possessing.

Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. Second Edition, revised and enlarged. By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Illustrated with Two Hundred and One Engravings and Thirteen Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–18 to 605. [Price, $4.75.]

THAT the first edition of this book is followed in a year by a second is good proof that it supplies a need of the medical public. A careful examination of Dr. Hare's work shows that the reason of its success lies in the fact that it contains a satisfactory discussion of the mechanism and causation of the multifarious symptoms met with in medical practice. In the majority of text-books the question of the production and diagnostic meaning of symptoms is passed over in the most perfunctory manner, the presumption being that the reader is fully acquainted with their possible relationships and modes of causation. In this book, *per contra,* it is assumed that the seeker for knowledge needs a minute statement of the manner and meaning of each sign and symptom and an explicit recapitulation of the various diseases which may be indicated by it—certainly a very desirable thing in hunting up a solution for a perplexing case.

While this has been admirably done, we can not help feeling that it is a mistake to include the so-called "differential" diagnosis—meaning the distinguishing of one disease from others which resemble it—with the possible diagnostic indications from single symptoms.

In attempting to make a diagnosis from the starting point of one or two prominent symptoms, the reader desires first a clew to a group of diseases, then, separately, a pretty full discussion of the "differential" diagnosis of this group, in which the essential facts concerning each disease are succinctly presented in such a manner as to give a clear clinical picture. The lack of some such arrangement in this volume leads to a sense of incompleteness in one's inability to find between the same covers a systematic account of a disease, although the clew to it may have been discovered. This lack, however, if it is one, is easily supplied by having at hand a text-book of practice pure and simple.

The two indexes of the first edition, which proved to be extremely annoying, have very properly been combined in this. The illustrations are numerous and useful.

Dr. Hare is to be congratulated on having produced a valuable and useful volume.

A Manual of Obstetric Practice. For Students and Practitioners. By Professor A. DÜHRSSEN, M. D., Late First Assistant in the Obstetric Clinic of the Charité Hospital in Berlin. Translated and edited from the Sixth Amended and Enlarged Edition by JOHN W. TAYLOR, M. D., F. R. C. S., Surgeon to the Women's Hospital, Birmingham, and FREDERICK EDGE, M. D., F. R. C. S., Surgeon to the Women's Hospital, Wolverhampton. With Illustrations. London: H. K. Lewis, 1897. Pp. xviii–304.

IT is no surprise to us that this work has gone through five editions, and appears again for the sixth time. As a rule, the so-called manuals are so badly written and contain so little that is useful that they are valueless. It is a pleasure to see so concise and thorough a work as is comprised in the three hundred pages of this book. It opens with an anatomical introduction which is all that is necessary for any one who has any knowledge of anatomy. Then follows the physiology of pregnancy, describing the development of the fertilized ovum, that of the fœtus, and the diagnosis of pregnancy. Following this is the physiology of labor, with its stages and mechanism and the effect of labor upon the fœtal head. Next come the other presentations than those of the head, with the management of labor in general and in various presentations. The chapter on the antisepsis of midwifery is good, but, of course, applies more particularly to the methods in use in Germany than to this country. Following this we find the physiology and the regimen of the lying-in period. Ten pages are given up to the pathology of pregnancy. Diseases of the ovum, untimely birth, the pathology of labor, contracted pelvis, labor obstructed by abnormal resistance on the part of the child, and the pathology of the puerperium are the further subjects of the main body of the book.

An appendix is given in which appears a most useful set of rules for the preparation of the history of a case of labor. Then obstetric operations are considered, including an operation which belongs entirely to Dührssen, which he calls "vaginal Cæsarean section." He has performed the operation but once, in a case where vaginal fixation had been performed the year before for prolapse and retroversion. He describes the operation as follows: "The portio was seized laterally with two volsellæ, large specula were inserted into the anterior and posterior fornices; then the posterior fornix, the portio, and the anterior fornix were divided sagitally, and the pouch of Douglas separated bluntly from the posterior uterine wall. The peritonæum was torn in doing this at one spot. The posterior cervical and body wall thus exposed was split sagitally, and the severe bleeding controlled by ligatures. Similarly, the bladder was separated in front and the anterior uterine wall divided. The plica vesico-uterina did not come into view. The membranes bulged through the opening thus made to about the size of the palm of the hand. The hand could be easily passed into the uterus and the child was turned and extracted. The placenta was born spontaneously, whereupon the uterus was tamponaded and the incisions were closed with catgut. The patient was discharged on the sixteenth day with a thriving child. The uterus was in normal position, and the incisions healed by primary union."

The translators deserve every credit for the manner in which they have brought out this book.

A Handbook of Midwifery. By W. R. DAKIN, M. D., B. S. (Lond.), F. R. C. P., Obstetric Physician and Lecturer on Midwifery and Diseases of Women to St. George's Hospital, etc. With Four Hundred Illustrations (nearly all of which are original). London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xx–629.

To the student of obstetrics this book will be of special interest for the reason that the illustrations are, for the most part, original and particularly good. It is refreshing to see a work on obstetrics which does not contain questionable illustrations. Not only are the illustrations good, but the text also shows an amount of care and study that places the work in the foremost rank of obstetric literature. But one criticism can be made, and that is, the type chosen is too small for easy reading. The book contains nearly six hundred pages, and is followed by a thorough index of authors and also one of subjects.

The physiology of pregnancy begins the work, and is followed by the physiology of labor, the management of labor, the physiology of the puerperal period, the newborn child, the pathology of pregnancy, obstetric operations, the pathology of labor, the pathology of the puerperal period, and the pathology of the newborn child. Then, in an appendix, thrombus of the vagina and hæmatoma of the vulva are described, and next Walcher's position.

Medical Report of the Society of the Lying-in Hospital of the City of New York. Incorporated March 1, 1799. New York: D. Appleton and Company, 1897. Pp. viii–355.

In reading a report like the one at hand one can but be impressed with the immense amount of clinical data that is practically wasted in the greater number of our large hospitals. We believe that the New York Lying-in Hospital, the Presbyterian Hospital of New York, the New York Eye and Ear Infirmary, and the Johns Hopkins Hospital, in Baltimore, are almost the only ones in this country from which anything like regular reports upon clinical observation are issued, yet their value is recognized on all sides.

The very fact that such works are so rare, although it is greatly to be deplored, gives a peculiar value to the few that we have—a value that in the present instance is increased not a little by the evident care and attention to detail with which the subject-matter has been prepared. The tables of statistics, in which the report is so rich, are an evidence of this. The exact method of their preparation is explained and any liability to error pointed out. Moreover, in many instances, a synopsis of the history of each case which presented marked individual peculiarities is given.

The first four chapters are devoted to a description of the plan and practical working of the hospital, and stand somewhat in the relation of a preface or introduction to the body of the report. Then follow a general Statistical Synopsis by Dr. Painter and a Statistical Report of Forceps Operations by Dr. Flint. These statistics are of great interest and contain much that is suggestive. They will doubtless be widely quoted. A valuable addition to the literature of interrupted pregnancy is found in the chapter prepared by Dr. Edgar, which is based upon six hundred and thirty-five cases, covering a period of six years. It contains a synopsis of the literature of the subject, with a very complete bibliography. The bacteriology, ætiology, complications, sequelæ, and treatment are presented in turn. The treatment of early abortions with the curette seems to have given almost uniformly good results, when we consider the unfavorable surroundings of many of the patients. The chapter shows very well the enormous amount of work done by this institution and the care with which that work is recorded.

The chapter by Dr. Lambert on Asepsis, Morbidity, and Mortality will be of considerable interest to the general practitioner on account of its thoroughly practical character. The lateral posture for delivery is favored, and in normal cases no internal disinfection of the parturient canal is attempted before labor.

Most interesting analyses of one hundred and forty-six cases of marked pelvic deformity and of two hundred and seven cases in which version was performed are presented by Dr. Flint, while the thirty-one instances of placenta prævia form the subject of a chapter by Dr. G. R. White.

Fractures in the Newborn are studied by Dr. Carmalt. A very complete bibliography and several illustrations from photographs, diagrams, and Röntgen-ray pictures help to make it an interesting chapter.

Among the reports of departments, that of Dr. Huntington, on the anatomy of the fœtal thorax, is perhaps the most noticeable. The clearness of the text is enhanced by many good illustrations and diagrams.

Taken as a whole, the value of this report would be hard to overestimate. Both the hospital and its medical board are to be congratulated upon their presentation of so great a mass of clinical facts in a form so concise and so practical.

A Text-book of Special Pathological Anatomy. By Ernst Ziegler, Professor of Pathology in the University of Freiburg. Translated and edited from the Eighth German Edition by Donald MacAlister, M. A., M. D., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and Henry W. Cattell, M. A., M. D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections IX–XV. New York and London: The Macmillan Company, 1897. Pp. xv–579 to 1221.

The second part, the latter half, of this well-known work has just been translated, and the full English edition is now offered to American readers. The present volume contains the chapters relating to the alimentary system, the liver and pancreas, the respiratory system, the genito-urinary organs, the eye, and the ear. The section on the eye has been revised and amplified by Professor Haab, of Zürich, and that pertaining to the ear by Professor Wagenhäuser, of Tübingen. Nearly a hundred new drawings have been added to this edition of the work, making it in this respect remarkably full and valuable.

The works cited in the reference lists include many of the newer original papers on the special subjects and the selection has been made with good judgment. The student is therefore enabled, as before, to quickly reach the full literature of almost any subject in pathology by reference to the more important titles found in these lists. Of the subject-matter, it is unnecessary to state that it is always accurate and quite as complete as is possible in volumes of comparatively small size.

It will not be amiss to emphasize the opinion expressed on the appearance of Part I, and generally acknowledged, that the complete work in its present form represents the acme of scientific composition and elegant book-making.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., Professor of Hygiene, and Director of the Laboratory of Hygiene, University of Pennsylvania. Fourth Edition, enlarged and thoroughly revised. With One Hundred and Six Illustrations, of which Nineteen are Colored. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–13 to 543. [Price, $2.75.]

The author of this popular laboratory manual of bacteriology has made some notable changes and improvements in his fourth edition, which has followed the last revision almost within a year. These consist principally in the addition of chapters relating to the bacillus of the bubonic plague, the bacillus of influenza, and the gonococcus. Each of these chapters is concise and accurate and adds greatly to the completeness of the work.

Probably at this time, or six months since writing, the author would have more to say about Widal's reaction and rather less about Elsner's method for the separation of the typhoid bacillus from the stools. Stoddart (*Journal of Pathology*, June, 1897) and His (*Journal of Experimental Medicine*, vol. ii, No. 6) have suggested new methods which may supplant the unsatisfactory procedure of Elsner. It still appears that the construction of many sentences in the volume could be improved.

Spinal Caries (Spondylitis or Pott's Disease of the Spinal Column). By NOBLE SMITH, F. R. C. S. Ed., L. R. C. P. Lond., Surgeon to the City Orthopædic Hospital, etc. Second Edition. London: Smith, Elder, & Co., 1897. Pp. 153. [Price, 5*s*.]

MR. NOBLE SMITH confirms the conclusion long ago reached by American orthopædists, that spinal caries is generally a curable disease, and that success depends above all things upon accurate support of the spine. His brochure consists largely of records and sketches from his own practice. Special attention is given to the lateral deviations associated with Pott's disease and to obscure and unrecognized cases. The use of jackets is condemned and that of adjustable steel supports advocated.

Étude sur les malformations congénitales du genou, par le Docteur G. POTEL, Ex-interne des hôpitaux, etc. Lille: L. Danel, 1897. Pp. 176.

DR. POTEL, already favorably known by reason of a paper on congenital absence of the patella, published in collaboration with Professor Phocas, of Lille, in the *Revue orthopédique*, gives as his graduating thesis an excellent *résumé* of the published facts in relation to the congenital deformities of the knee. The author finds these malformations much more frequent than has hitherto been supposed, for they are barely alluded to in most surgical treatises. He has been able, for example, to find about eighty cases of congenital genu recurvatum, whereas fewer than half that number had been collected before. A very sharp distinction is drawn between this affection and congenital forward luxation of the tibia—rather too sharp a distinction in the writer's estimation. The author believes genu recurvatum to be due to a retraction of the quadriceps muscle occurring during fœtal life, and absence of the patella to imperfect development of this muscle. The curious fact has been brought out by several writers that a missing patella may develop after the functional integrity of this muscle has been restored. Typical dislocations, absence of bones of the leg, and other malformations are discussed in other chapters of the work. The material is well arranged and the author's conclusions are for the most part supported by the evidence. It must be said that this brochure marks a distinct advance in a little cultivated field; all medical men will find Dr. Potel's paper interesting, and to those working in similar lines it will be indispensable.

About Children: Six Lectures given to the Nurses in the Training School of the Cleveland General Hospital in February, 1896. By SAMUEL W. KELLEY, M. D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons, Medical Department of the Ohio Wesleyan University, etc. Cleveland: The Medical Gazette Publishing Company, 1897. Pp. 9 to 179.

UNDER this name one more has been added to the many books, great and small, on the care of children, which are intended rather for the general public than for the practitioner. A very extended discussion of the subject is impossible in so brief a treatise, but the easy style of the author and the common sense of his suggestions will prove attractive both to the lay reader and to his professional brethren. An appendix gives some of the most commonly used methods of preparing food for children.

The book is neatly bound and the important headings are all in bold-face type. Reference is also facilitated by a very complete index.

Appendicitis and its Surgical Treatment. With a Report of Seventy-five Operated Cases. By HERMAN MYNTER, M. D. (Copenhagen), Professor of Operative and Clinical Surgery in Niagara University, etc. Philadelphia and London: J. B. Lippincott Company, 1897. Pp. 3 to 303. [Price, $2.]

THIS interesting monograph was prepared by the author and submitted to the faculty of the University of Copenhagen for the degree of doctor of medicine. The fact that it was accepted by that body is a sufficient guarantee of its scientific value.

Somewhat more than one half of the book is devoted to an exhaustive consideration of the ætiology, pathology, symptomatology, and treatment of the various forms of appendicular inflammation; the remainder to a report of personal cases. While it is easy to perceive from a careful perusal of the work that Dr. Mynter is an earnest advocate of early operation in all cases where the diagnosis can be established in time, he presents both sides of the question with commendable fairness.

The author's views upon the indications for operation, and upon the methods to be employed under the varying conditions, agree, in the main, with those of the best American authorities; and although his experience has perhaps been somewhat less extensive than that of many other writers on the subject, one can not fail to be impressed with the care with which he has studied his cases, with the logic of his reasoning, and with the excellence of his judgment.

An interesting feature of the book is a more or less detailed account of the views held by leading surgeons in other countries and of the results which have invariably followed the employment of the so-called "conservative" methods of treatment.

Text-book of Materia Medica for Nurses. Compiled by LAVINIA L. DOCK, Graduate of Bellevue Training School for Nurses. Third Edition, revised and enlarged. Eleventh Thousand. London and New York: G. P. Putnam's Sons, 1897. Pp. xl–240. [Price, $1.50.]

THE first and second editions of this work are so well known that it is necessary to call attention only to the addition of several drugs to those previously treated of and to the chapter on the metric system in its relation to doses. Some changes may also be noted in the classification of drugs, but the material alterations in the present edition are few.

The Medical News Visiting List. 1898. Thirty Patients per Week. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. 192. [Price, $1.25.]

The 1898 issue of this very convenient pocket reference and memorandum book is in no respect inferior to those of preceding years. The practical information it contains as to a great variety of matters is readily accessible, and the blank forms for entries are convenient.

BOOKS, ETC., RECEIVED.

A Text-book of the Diseases of Women. By Henry J. Garrigues, A. M., M. D., Professor of Gynæcology and Obstetrics in the New York School of Clinical Medicine, etc. Containing Three Hundred and Thirty-five Engravings and Colored Plates. Second Edition, thoroughly revised. Philadelphia: W. B. Saunders, 1897. Pp. 728. [Price, $4.]

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume V. London and New York: The Macmillan Company, 1897. Pp. xii–880. [Price, $5.]

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, M. D., LL. D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. Third Edition, revised and enlarged, with Chromogravure Plates and other Illustrations. New York: D. Appleton and Company, 1897. Pp. xiii–894. [Price, $5.]

Handbook of Materia Medica, Pharmacy, and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By Samuel O. L. Potter, A. M., M. D., M. R. C. P. Lond., Professor of the Principles and Practice of Medicine and Clinical Medicine in the College of Physicians and Surgeons of San Francisco, etc. Sixth Edition, fully revised and greatly enlarged. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xv–17 to 900. [Price, $4.50.]

The Peritonæum. By Byron Robinson, B. S., M. D., Chicago, Ill. Part I. Histology and Physiology. With Two Hundred and Forty-seven Illustrations. Chicago: C. V. Waite & Co., 1897. Pp. viii–406. [Price, $3.75.]

Psilosis or "Sprue"; its Nature and Treatment. With Observations on Various Forms of Diarrhœa Acquired in the Tropics. By George Thin, M. D. Second and Enlarged Edition. London: J. & A. Churchill, 1897. Pp. xii–270. [Price, $3.50.]

Science. The Ancient Hebrew Significance of the Book of Genesis. The Foundation of Every Science, Philosophy, and Religion of all Ages. With a Chapter showing the Application of the Law in Healing Disease. By Frank Wood Haviland, M. D. First Edition. New York: Published by the Author, 1897. Pp. 5 to 186.

Le torticollis et son traitement. Par le Dr. P. Redard, Ancien chef de Clinique chirurgicale de la Faculté de médecine de Paris, etc. Paris: Georges Carré et C. Naud, 1897. Pp. iii–250. [Prix, 6 frs.]

A Report of the Board of Health of the City of New York to the Hon. William L. Strong, Mayor of the City of New York.

Surgical Melange. By B. Merrill Ricketts, M. D., of Cincinnati. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Appendicitis. A Report of Four Cases. By B. Merrill Ricketts, M. D. [Reprinted from the *Cincinnati Lancet-Clinic.*

Craniectomies. With a Report of Four Cases. By B. Merrill Ricketts, M. D. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Abdominal Incision for Ascites. By B. Merrill Ricketts, M. D. [Reprinted from the *Cincinnati Lancet-Clinic.*]

The Present Status and Prospects of the Art of Medicine. By Ernest L. Shurly, M. D., of Detroit. [Reprinted from the *Physician and Surgeon.*]

Questions Concerning the Ætiology and Prevention of Pulmonary Consumption. By Ernest L. Shurly, M. D. [Reprinted from the *Physician and Surgeon.*]

The Ocular Expressions of Gout. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the *University Medical Magazine.*]

The Abuse of Medical Charity. By Frederick Holme Wiggin, M. D. [Reprinted from the *Medical News.*]

Massage, Movements, and Bandaging in the Treatment of Displaced Semilunar Cartilages. By Douglas Graham, M. D., of Boston. [Reprinted from the *American Journal of the Medical Sciences.*]

The Surgical Treatment of Ano-rectal Imperforation in the Light of Modern Operative Procedures. By Rudolph Matas, M. D., of New Orleans. [Reprinted from the *Transactions of the American Surgical Association.*]

Suicide. By C. H. Hughes, M. D., of St. Louis. [Reprinted from the *Transactions of the Missouri State Medical Association.*]

The Ætiology and Classification of Tumors. By Samuel H. Friend, M. D., of Milwaukee. [Reprinted from the *Journal of the American Medical Association.*]

The Operation itself in Appendicitis. By Lewis S. McMurtry, M. D., of Louisville. [Reprinted from the *Medical News.*]

The Evolution and Perfection of the Aseptic Surgical Technique. By Lewis S. McMurtry, M. D. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

The Functions of the Tensor Tympani and Stapedius Muscles, and Incidentally the Mechanism of Tinnitus Aurium. By Thomas F. Rumbold, M. D., of St. Louis. [Reprinted from the *Laryngoscope.*]

Miscellany.

The Agglutinant Reaction.—The *Wiener klinische Wochenschrift* for August 19th contains an account of J. Lévy's two series of experiments which he undertook for the purpose of ascertaining if the agglutinant reaction was a reaction of infection or of immunity (*Presse médicale,* November 24th).

In the first series sixteen healthy or diseased subjects, who had not had typhoid fever, were immunized against this affection according to the procedure employed by Haffkine for anti-cholera inoculations. Their serum, the agglutinant power of which had been examined before the inoculation, was afterward studied from the same point of view, at regular intervals, after the injections.

This first series of investigations showed that: 1. The serum of normal subjects sometimes exercised an agglutinant action on the typhoid bacilli when it was somewhat diluted. 2. After the inoculation with sterilized typhoid cultures, the serum, from the sixth day, acquired agglutinant properties in cases in which it had not formerly possessed any, or else these properties increased considerably in cases in which they had existed before. 3. The injections provoked a local and general reaction the duration of which did not exceed from twenty-four to forty-eight hours.

In a second series of experiments M. Lévy sought to ascertain if any connection existed between the agglutinant properties and the bactericidal properties of typhoid serum. For this purpose he made an estimate of the quantity of the normal serum (of man or of the guinea-pig) or of agglutinant serum (of immunized goats or guinea-pigs) which was necessary to neutralize the effects of a mortal dose of typhoid cultures in intraperitoneal injections in guinea-pigs.

These investigations showed that the normal serum of the guinea-pig, which possessed an agglutinant power of one in one, neutralized the effects of the intraperitoneal injection of a fatal dose of virulent typhoid cultures when given in doses of eight cubic centimetres. For the non-agglutinant serum of the normal man eight cubic centimetres were insufficient. The serum of the immunized guinea-pig, which possessed an agglutinant power of five hundred, had no action, except when it was injected in a quantity exceeding five cubic centimetres. In regard to the serum of the other guinea-pigs, the agglutinant power of which was respectively one hundred and three hundred, the quantity necessary was more than a cubic centimetre for the first, and more than three cubic centimetres for the second. As for the goat's serum, the agglutinant power of which was one thousand, the necessary quantity was five cubic centimetres.

Concerning three individuals, who had had typhoid fever three or four months before, whose serum had, respectively, an agglutinant power of one hundred, three hundred, and one hundred, the quantities necessary were five, six, and three cubic centimetres. Finally, for a subject with a mild form of typhoid fever, in whom the serum had an agglutinant power ranging from one hundred to three hundred, the amount of twenty-five cubic centimetres was not sufficient to preserve the guinea-pig from the effects of an intraperitoneal injection of a fatal dose of typhoid cultures.

Concerning the nature of the agglutinant reaction, the author thinks that it is rather an immunizing reaction. He observed, notably in his first series of experiments, that the agglutinant reaction was shown in the serum of guinea-pigs that were inoculated only from the beginning of the sixth day after the injections; that is to say, four days after all the reactional symptoms of the infection had disappeared. In the second place, clinically, in typhoid-fever patients the agglutinant reaction appears sometimes late, on the twenty-second day, according to Widal; during the eighth week, according to Breuer; toward the end of the second week, according to Stern; on the sixteenth and seventeenth days, according to Kolle; and on the thirteenth day, according to Pick.

The author thinks, however, that, if the agglutinant reaction is one of immunity, it can not, nevertheless, be identified with the other manifestations of this immunity; for instance, with the formation of antitoxic substances to which the specific serum owes its bactericidal properties. These two phenomena, he says, can not be coincident, and present themselves separately, without connection with each other; that is to say, man or animals may be strongly immunized and possess a very agglutinant but not bactericidal serum, or, inversely, a very bactericidal, but not immunizing, serum.

Nephritis Due to Malaria.—The influence of malaria, remarks M. A. F. Plicque in the *Journal des praticiens* for November 27th, in the production of Bright's disease is generally admitted. The importance, however, of this influence has been very variously appreciated, and seems even variable according to the malarial regions. While Rosenstein is of the opinion that paludism causes nearly a quarter—that is, twenty-three per cent.—of the cases of nephritis observed in Dantsic, in other regions this action seems to be exercised in a more exceptional manner. It appears generally much more powerful in the paludism of temperate and especially damp and cold countries than in that of tropical countries.

The mode of action on the kidneys is easily explained. In the acute symptoms each febrile attack causes an increase of work and congestion of the renal filter. Albumin is frequently present after attacks of a certain intensity, and it becomes the rule in patients with malarial affections of long standing, who have an already overworked kidney, after even slightly intense attacks. It is in similar cases also, and more particularly in certain countries—Madagascar, for instance—that paroxysmal hæmoglobinuria is observed. In addition to the soluble pigments in the blood, the urine is charged with biliary pigments. This form, according to the author, is often followed by nephritis. Often also during the crisis unexpected symptoms of uræmia manifest themselves under the influence of the obstruction of the uriniferous tubules. The epithelium is then infiltrated by pigmentary granulations containing iron. This ferruginous overcharging of the kidney by the decayed blood pigment is also observed in chronic cachexia. All the cells thus infiltrated with iron are blackened by ammonium hydrosulphate. There is shown here a most important and sclerogenous action. The action of Laveran's hæmatozoa and of their toxines has a great influence in the production of these renal lesions.

From an anatomical and clinical point of view, in addition to the acute form of renal obstruction in hæmoglobinuric bilious fever, two principal forms should be distinguished. The first is a diffuse inflammatory process ending in progressive sclerosis of the parenchyma. This diffuse inflammation may even take an acute course, and this acute course belongs rather to the first attacks of an intense malarial poisoning. The chronic course with induration and partial atrophy of the gland belongs rather to the prolonged and tenacious forms of paludism. In the second case, the sclerosis is less diffuse; it assumes an annular form connected with the nodular tumefaction of certain portions of the gland. The lesion, instead of being diffuse, may also become localized, in the multiple and independent glandular regions. The course of the lesions may also be either acute or chronic. But, even in the acute form, the clinical evolution remains somewhat slower than in diffuse nephritis.

Clinically, the malarial forms of nephritis present several peculiarities. The acute form, in addition to the usual symptoms of anasarca and uræmia, is often distinguished by the early appearance of cardiac troubles and of the rhinitis of Bright's disease. Attacks of hæmaturia, of hæmoglobinuria, and of icterus are frequent, and death may occur from gangrenous attacks. The chronic form may be extremely insidious. Sometimes it is not until after several attacks of anasarca that albuminuria appears.

The specific treatment of paludism has, unfortunately, no influence on the renal lesions formed. A change of climate is the only efficacious means when it can be employed in the beginning. M. de Brun, however, says the author, has called attention to the good effects of quinine in the transitory albuminuria which is connected with intermittent attacks.

Hæmophilia treated by the Thyreoid Substance.—In the *Scalpel* for November 7th (*Indépendance médicale*, November 24th) M. L. Déjace reports the following interesting case: A woman had suffered for two years from hæmophilia, which had reduced her to a condition of excessive anæmia. When she presented herself for examination she stated that she had undergone varied and most energetic treatment. Her face was bloodless, the mucous membrane was absolutely colorless, and the gums bled profusely at the least touch. The legs, the arms, and the body were covered with spots of purpura. During each menstrual period the blood was discharged in an alarming abundance, and the menses lasted on an average from twelve to fourteen days. The patient's appetite had remained rather good.

She had made use of all the hæmostatics, and repeated injections of ergotine had been practised, but without avail, and the hæmorrhages had continued in abundance, rendering the patient more and more anæmic.

The author's treatment was based on certain observations made in regard to the action of the thyreoid substance in the treatment of metrorrhagia. He prescribed for this woman capsules of the thyreoid substance, as it was difficult for him to obtain the fresh gland. The patient took regularly three capsules a day, beginning on the 9th of October. On the 12th the menses appeared, and instead of continuing for twelve days, as had before been the case, lasted but four days and were moderate in quantity. On the 18th the loss of blood from the gums disappeared.

On the 27th, the patient, whose weight had diminished only a little over twelve ounces, stated that she had had no hæmorrhage since the last menstrual period. The purpuric spots had disappeared, the gums had become hardened, and the face had regained a rosy color. The patient no longer complained except of slight palpitations. Up to the time of the report she had not exceeded the dose of three capsules a day.

This observation shows, the author thinks, that the thyreoid substance exercises an action as yet unknown on the plasticity of the blood.

The Value of Olive Oil in the Treatment of Typhoid Fever.—In the *Lancet* for November 27th Mr. Owen F. Paget gives his experience with the employment of olive oil in a hundred cases of typhoid fever which came under his observation during his residence in Fremantle, Western Australia. Many of the patients, he says, lived in tents and were unable to obtain fresh milk, yet in spite of these disadvantages the percentage of death was *nil*. This, he thinks, is very remarkable, seeing that among those who were removed to the hospital, where they were properly attended to and received suitable nourishment, the percentage was as high as twenty in 1896, and eleven in 1897.

Mr. Owen attributes his success very largely to the use of salad oil. Nearly all typhoid-fever patients, he says, are suffering from constipation or diarrhœa when they first come under observation; during constipation the typhoid bacillus acquires its power of developing, and this constipation is followed by diarrhœa and a gradual solution of the fæcal accumulations caused by the pouring out of mucus and other fluids from the intestine. These fæcal solutions, being intensely irritating, help to inflame the already infected Peyer's patches and, in addition, give rise to violent peristalsis, preventing rest which is so important to inflamed regions. Added to this there is the enormous drain of fluid from the intestinal mucous surface. Now the fluid poured out is of course to a certain extent reabsorbed, but not before it is saturated with ptomaines; this necessarily causes violent constitutional disturbances in the patient, such as high temperatures, cardiac paralysis, and intestinal paralysis with tympanites, exhaustion, delirium, and insomnia (with its accompanying uses of depressing drugs), sapræmia, septicæmia, pyæmia, secondary infection of glands, abscesses in bones, and death. The problem, says the author, resolves itself into treating an inflamed and possibly ulcerated surface, and the same laws hold good here as in any other part of the body—namely, rest and protection from irritating substances and collection of discharges. As a proviso it is necessary to remember that the patient must not starve.

Mr. Owen thinks, therefore, that salad oil only is needed to keep the ulcers at rest and to remove irritating substances. He gives it as an injection by the bowel, a large breakfast-cupful (from a quarter of a pint to half a pint) being used for the first four or five days at intervals of from twelve to twenty-four hours. Its benefits, he says, are distinct from the first; the temperature almost always falls 1° F., and the patient, instead of being irritable and restless, becomes calm and composed. After the fifth day it may be given every second day or left off entirely if the patient is having natural motions at least every twenty-four hours and if the temperature is steadily falling. There is, however, a certain proportion of cases in which the patients do not respond to injections; nothing comes away and the bowel is apparently empty, but it is in these very cases that the accumulation is worst. Suddenly the temperature runs up and the patient is seriously ill. Now it is the very virulence of the accumulation which, paralyzing the gut, prevents its coming away. The remedy, says the author, is simple. Give salad oil by the mouth, a large breakfast-cupful at a time; there is no need to be frightened, no harm will result, but the bowels will almost certainly respond, and injections are now able to manage the rest. If the first dose is without effect repeat after twelve hours.

Salad oil in typhoid fever is, he thinks, a perfect boon to the general practitioner. He can leave his patient, fearing neither high temperature, delirium, insomnia, heart failure, nor tympanites. He states that he has never used the wet pack or other appliances for lowering the temperature (except sponging with vinegar and lukewarm water) and that he has never used any of the vaunted intestinal antiseptics, never having had a high temperature or other complications, which did not respond to salad oil, except in two cases. The first was that of a boy with hæmorrhage whose father and mother were always drunk and neglected him disgracefully. The second was a case of mitral stenosis which came under his care in a late stage of the disease. The patients in both cases ultimately recovered.

The author states that there seems to be no danger in conscientiously palpating and percussing the abdomen during the first week of the disease; he thinks it is a valuable aid in estimating the disappearance of accumulations, although at present, he says, the temperature and general well-being of the patient are his usual guides.

Mr. Owen adds that salad oil, a pint by the mouth and half a pint per rectum, has given him the most gratifying results in two cases of typhlitis.

Latent Biliary Lithiasis and its Surgical Treatment.—*Treatment* for November 25th calls attention to a paper on this subject which was recently read by Dr. Duret at the French Congress of Surgery, in Paris. According to the author, in cases of latent biliary lithiasis, where there is neither jaundice nor a tumor in the region of the gall bladder, the pain and the general troubles are peculiarly severe, and reduce the patients to a condition of weakness and progressive emaciation which is painful to see. Such patients, he says, often ask for surgical assistance, which may be refused because no tumor is felt. The symptoms are produced by one or more calculi immured in a hypertrophied gall bladder, which yet is not distended with fluid. On the contrary, it is often retracted, and during the operation it must be looked for beneath the liver or in the centre of a mass of fibrous tissue, when it has to be isolated by a careful dissection.

Eleven times out of twelve these latent cases occurred in women in Dr. Duret's practice. The patients often had no attacks of biliary colic, but they suffered from crises, intense pain, and inflammatory swellings in the situation of the gall bladder. The symptoms were often of long duration, for they had lasted for two, six, eight, and even ten years. There were often well-marked digestive troubles, loss of appetite, and inability to assimilate food. The patients finally became confirmed neurasthenics. Dr. Duret performed cholecystectomy six times, and cholecystotomy six times, and the patients were cured.

Bacteriological Researches concerning a Fatal Case of Febrile Rheumatism, complicated with Endocarditis, Pericarditis, and Chorea.—At a recent meeting of the Paris Academy of Medicine, a report of which is published in the *Indépendance médicale* for November 24th, M. Triboulet and M. Coyon made the following communication: At the autopsy of a child they had procured some blood from the inferior vena cava, a segment of the mitral valve, and one of the spinal cord, with which they had obtained, in sterilized milk, anaerobic cultures of a special microbe, accompanied by sparse chains of streptococci. After sowing again, the cultures were obtained in a state of purity. The microbe in question caused the fermentation of the milk which it coagulated and separated into a serous lower layer and a frothy upper layer bearing large, firm bubbles of an alveolar appearance; the culture gave out a butyro-cheesy odor which was not at all fœtid. The medium was strongly acid. On sheets the presence of a large bacillus was recognized; it was of a variable length, sometimes short, sometimes a little longer, with rounded extremities. This microbe colored well with the different reagents, and tolerated Gram's stain. Inoculated in doses of from two to three cubic centimetres in the muscular mass of the thigh of a guinea-pig, the cultures caused death in from twenty-four to thirty hours, and gave rise to the formation of a large sero-sanguineous collection in the fold of the groin. The microbe was met with again in a state of purity in this serous liquid.

The morphological characteristics and, better still, the reaction of the cultures in the anaerobic sterilized milk, and also the results of the intramuscular inoculation in the guinea-pig, form a mass of details which absolutely corresponded to that which Thiroloix had described several times in regard to bacteriological investigations made with the blood of living rheumatic subjects. It was shown from that, by the authors, that the microbe isolated by them thirty-six hours after death should not be considered as a common microbe of putrefaction.

The observation presented, aside from the ascertaining of a possible specific, pathogenic microbe, was open to considerations of another order. The child had presented, during its life, evident symptoms of chorea. The cultures of a segment of the spinal cord having given pure cultures of the microbe in question, it was allowable, the authors thought, to suppose that the presence of even this microbe in the nervous centres was probably the exciting agent of the abnormal movements.

The New York Academy of Medicine.—At a stated meeting of the Section in Surgery, on Thursday evening, the 16th inst., Dr. Ellsworth Eliot was to deliver a memorial address on the late Dr. J. Lewis Smith, and Dr. B. Farquhar Curtis was to read a paper on The Treatment of Chronic Empyema, which was to be discussed by Dr. R. F. Weir, Dr. A. G. Gerster, Dr. F. W. Murray, and others.

At the next meeting of the Section in General Medicine, on Tuesday evening, the 21st inst., Dr. Max Einhorn will read a paper entitled The Diet of Dyspeptics, which will be discussed by Dr. W. H. Thomson, Dr. G. B. Fowler, Dr. R. Van Santvoord, Dr. W. H. Katzenbach, Dr. T. S. Southworth, Dr. C. C. Ransom, Dr. T. J. McGillicuddy, and others.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 22d inst., Dr. Robert C. Myles will read a paper entitled Diseases of the Tonsils. Cases will be presented, and apparatus and specimens will be exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 23d inst., cases will be reported and specimens will be exhibited. The meeting will be clinical unless otherwise stated on the Section card.

Throat Lesions in Typhoid Fever.—At a recent meeting of the British Laryngological, Rhinological, and Otological Association, a report of which appears in the December number of the *Journal of Laryngology, Rhinology, and Otology*, Dr. Tresilian made a communication in regard to four consecutive cases of typhoid fever in which throat lesions had been presented. The following case is an example: A very severe case in a young man, aged nineteen. He had chronic enlargement of the tonsils, and had had an attack of scarlet fever two months previous to the attack of typhoid fever. The onset of the latter was fairly sudden, with marked delirium as an early feature. The temperature ranged from 104° to 106° F. in the first week; there was diarrhœa, and the patient had from sixteen to twenty-three motions daily; also several sharp attacks of epistaxis. He also had three attacks of hæmorrhage from the bowel. The rash of typhoid was well marked, and he had a bad relapse.

At the end of the first week the patient complained of soreness of the throat and pain on swallowing; the voice became thick and husky, and the patient became deaf. On examining the throat the fauces and pharynx were found to be covered with thick shiny mucus. A spray of boric acid and borax was ordered to be used frequently, and the next day the mucus had all cleared away. The condition of the throat was then as follows: On the right tonsil and adjacent faucial pillar was a circular shallow ulcer, of about the size of a threepenny piece, with a stippled appearance; another similar ulcer occupied the base of the uvula, on the anterior surface; and a third on the anterior surface of the left tonsil. The tonsils and fauces were congested and swollen. The posterior wall of the pharynx was intensely inflamed and raw-looking. An examination of the larynx could not be made, owing to the patient's condition.

An examination of the ears showed a slight pink color and cloudy swelling of the membrane. The stippled appearance of the faucial ulcers somewhat resembled that of the lamina cribrosa of the optic nerve, as seen on direct examination. The throat lesions improved on continued use of the spray, and were practically well in about ten days, when the deafness also disappeared. The deafness was considered due to the throat lesions, a specific septic pharyngitis causing a similar condition of both Eustachian tubes and tympana, with swelling of the mucosa of the tympanic cavity, and an obstructive deafness resulting. When the patient's condition permitted it an examination of the larynx was made, with negative results.

Dr. Tresilian thought these cases showed that in typhoid fever an inflammatory and, in some cases, a specific ulceration of the throat might occur in an early stage of the affection, and that at a period before the diagnosis of typhoid fever could be easily arrived at—within the first week. They also showed that in a case in which such specific lesions had occurred contagion by the breath might occur to those near the patient.

Mr. Lennox Browne thought these cases enforced a most useful lesson. He stated that he had seen more than one case of typhoid fever with throat lesions in which the patients had been admitted to the hospital on an outside diagnosis of diphtheria, and, if, as had been done, complications in the throat and ear could be recorded in four consecutive cases by one observer, it was reasonable to believe, and his own experience confirmed it, that faucial lesions were much commoner in typhoid fever than was usually taught. The reason for this was, he said, that so few physicians of infectious hospitals took the trouble to make a routine examination of the throat and larynx or of the ear.

Modified Milk as distinguished from other Food Preparations.—The modified milk of the present day, says Dr. T. M. Rotch, in the December number of the *Archives of Pœdiatrics*, represents something far different from what it did in the time when only whey mixtures, cream mixtures, and the Meigs mixtures were known by the profession, and something of vastly greater range and importance. A point has been reached in infant feeding, he says, where the vital principles of the question are recognized—namely, that human milk, when properly adapted to the individual infant, represents the standard which should be followed in substitute feeding; also that this standard varies, so that there may be many combinations of the elemental percentages of fat, sugar, and proteids, and yet have all these combinations represent normal human milk.

In modifying milk, therefore, he says, there must be purity of supply and sterility of the modifying materials, no foreign matters, means of obtaining many different combinations of fat, sugar, and proteids to suit the individual infant, and accuracy in obtaining these varying percentages by modification. Two requirements of vital consequence are: First, a knowledge of what combination in the particular case is indicated. Second, a guarantee that the percentages demanded by the physician shall be accurately dispensed to the consumer. This can be done only by skilled supervision and trained clerks in a milk laboratory.

Dr. Rotch thinks that the modified milk of the present day demands a knowledge on the part of the physician and of the milk-modifier of the chemistry, physiology, and biology of both human milk and cow's milk, and of the principles of modification. The latter, he says, which are simple and self-evident, are as follows:

1. The materials for modification must be fresh, safe, stable, and practically aseptic.
2. There must be accuracy in the modification in the laboratories, so that the exact mixture may result from the prescription.
3. There must be the utmost care in preserving the milk after it is delivered to the consumer.

In the first instance it must be remembered that the cow is a sensitive animal, easily yielding to conditions good or bad in which she is placed. She is liable to diseases communicable to man and especially to infants. She is a ready vehicle for the transmission of obscure and often untraceable maladies, and her attendants are often the means of conveying many diseases. It is therefore evident that milk for infant feeding should be produced with the greatest care. It can not with safety be disinfected by antiseptics, and yet not only is it readily thrown out of equilibrium, but it is also a good culture medium for rapid and dangerous toxic changes. These requirements are met and their dangers obviated by the model farms connected with the laboratories where the cows are selected with special reference to their freedom from disease and their capability of producing a stable milk, also by the demand of the laboratory that those who care for the cows should be free themselves from disease and sufficiently intelligent to understand that cleanliness and asepsis must be carefully practised. In this way the suitable materials for milk modification can best be obtained.

In the second instance the laboratory insures accuracy by employing for the calculation of the percentages and the mixing of the modifying materials intelligent clerks trained for this purpose. The third instance is the one which necessarily is least under the control of the laboratory, and yet is very important and one where failure may entirely offset the value of the first two principles. It is the duty of both the physician and the milk-modifier, therefore, continues Dr. Rotch, to explain to those who are in charge of the milk when it reaches the consumer the scientific rules which will preserve it from deleterious changes. Unless this is done, and these rules are rigorously enforced, the whole value of the system of modified milk may be destroyed by a careless mother or nurse. The laboratory must indeed often bear the blame of ignorance and carelessness entirely outside of its own direct supervision, and it is perhaps inevitable that the laboratory should at times be made the scapegoat both of the physician who has not learned the principles or practice of percentage feeding and also of the mother or nurse who uses carelessly what has taken so much effort to produce. All these facts, says Dr. Rotch, should be considered by those who are investigating this new system of feeding, and, while allowing the great difficulties inherent to all systems of feeding, whether by the many infant foods or by irregular home modification endeavoring to copy laboratory completeness, yet acknowledge that accuracy in modification and the overcoming of these difficulties can best be accomplished in a thoroughly equipped laboratory.

The functions of the medical adviser, says the author, must not be confounded. The duty of feeding in every detail should rest with the physician; the duty of producing and supplying the food with the laboratory.

Concerning the present position of modified milk and what has been attained by it, Dr. Rotch adds, physicians have learned to think and speak in percentages, and their thoughts can be embodied in percentage prescriptions which can be put up accurately at the milk laboratories. Also these laboratories are under the skilled supervision of those who intend to keep them on an honest scientific basis, irrespective of the commercial value which must necessarily attach to them.

A Case of Abnormal Position of the Vermiform Appendix.—In the December number of the *Western Medical and Surgical Gazette* Dr. A. C. Godfrey, of Denver, gives the following ante-mortem history of the case of a little boy which came under the observation of Dr. P. E. Spratlin: The patient suffered from a curvature (lateral rotary) of the spine. For many years he had been subject to attacks of colic, which fact was not ascertained by the physician until his last illness.

On August 8, 1897, while playing with his brother, he was struck in the abdomen. He was immediately taken sick, but did not complain. On the next day he ate freely of green apples, and on the 13th Dr. Spratlin was called in to see him. He was vomiting freely and evidently suffering from cholera morbus. The physician succeeded in stopping the vomiting and, the boy said, the diarrhœa, but the pain continued. The temperature remained high and the pulse rapid. On very close questioning, the physician found that instead of having had diarrhœa, the boy had not had a passage since he had been called to attend him; that he had misled his parents by going often to the closet, having had a frequent desire to stool. There had been tenderness in the left iliac fossa from the beginning, and Dr. Spratlin found a tumor mass in that region. Calomel was administered freely, also castor oil. High rectal irrigation was tried, and even colonic flushing was aimed at, but there was an obstruction evidently in the region of the sigmoid flexure. A diagnosis of intussusception was made, and, owing to the gravity of the case, another physician was called in consultation. The diagnosis was verified, and all the conditions described were found to be present. Croton oil was administered. The boy was very weak and died the next morning.

No one, says Dr. Godfrey, could have reached a different conclusion in this case, as the symptoms and signs made it clearly one of intussusception of the bowel. The startling revelations of the autopsy, however, illustrate one of the cases in which the diagnostician is at sea because of an anatomical peculiarity.

At the autopsy the patient was found to be considerably emaciated, and the abdomen somewhat tympanic. On median abdominal incision, the omentum was found to be adherent to the abdominal wall, the intestines were glued together, and there was some clear fluid in the cavity. The omentum was especially adherent in the lower portion of the abdomen. After the adhesions were carefully separated and a view of the underlying structures obtained, the following conditions were found: Extending from the cæcum across the front of the abdomen and down on to the brim of the pelvis to the sigmoid flexure, just as it crosses the pelvic brim, was a structure filled with fluid. It came from the inner aspect of the cæcum, and was adherent by its tip to the sigmoid flexure of the colon, gluing two folds of the latter structure together, so as to produce complete obstruction of the bowel. This was the appendix vermiformis. On opening it, it was found to be full of pus and to contain many enteroliths. The opening into the cæcum was closed. The contiguous portions of the appendix and the sigmoid flexure were softened. Dr. Godfrey here states that he believes that, if the boy had lived longer, perforation into the rectum would have occurred. The fæcal stones, on section, were found to contain as a nucleus no special structure visible to the naked eye.

The author states that, owing to the abnormal position of the appendix in this case and the presence of the enteroliths, as Dr. Spratlin points out, the blow received on the abdomen is an illustration of trauma acting as an exciting agent in producing appendicular inflammation.

Eucaine as a Local Anæsthetic in the Surgery of the Throat, the Nose, and the Ear.—In a paper on this subject, in the *British Medical Journal* for November 27th, Mr. W. Jobson Horne and Mr. Macleod Yearsley give a brief summary of their former experience with eucaine hydrochloride in relation to the treatment of the throat, the nose, and the ear, in which the results obtained were sufficiently encouraging, they think, to justify further investigation. The points to which the authors call attention are the strength of the solution required; the rapidity, intensity, and extent of the anæsthesia; the general and local action upon the circulatory system; the after-effects; the amount of hæmorrhage following operations done under its influence; the question of hyperæmia or ischæmia as a result of its application to the turbinate bodies; and the occurrence of increased salivation from its use.

Regarding the strength of the solution, the authors state that pure eucaine is very slightly soluble in water, but the hydrochloride, obtainable in the form of five-grain soloids, is readily soluble in water at room temperature to the extent of ten per cent. At first the solubility of the soloids in their former experiments presented some difficulty, but this was completely overcome, and they now find the five-grain soloids of eucaine hydrochloride the most practical form in which to obtain the drug for the preparation of fresh solutions. One of these added to a hundred and ten minims, or approximately two drachms, of water at room temperature, will readily give a five-per-cent. solution, or two soloids added to the same amount of water will yield a ten-per-cent. solution. For examinations the authors used a four-per-cent. solution, although at times a two-per-cent. solution was found to be sufficient. For operations an eight-per-cent. solution was found sufficient, and, making allowance for the fact that the drug then in use did not remain in solution to the extent of more than six per cent., the solutions used by them were hardly equivalent to eight per cent.; a ten-per-cent. solution freshly prepared in the way indicated will, they think, be found sufficient for the performance of the operations commonly done under a local anæsthetic.

Concerning the rapidity, intensity, and extent of the anæsthesia, the authors go on to say, the degree of anæsthesia produced, and consequently the degree of comfort afforded to the patient and facility to the operator, depend largely upon the method of application of the drug.

In the case of the ear a few drops instilled and kept in contact with the part to be operated upon by inclining the head is far more efficient than the insertion of a pledget of cotton wool saturated in even a stronger solution and placed in the meatus. It is important that the meatus should be as clean as possible; inspissated pus or dead epithelium prevents proper contact with the tissue to be anæsthetized.

Now, they continue, as can be readily understood, the reverse is more efficient in the case of the nose. A spray blindly used in the nares, or however skillfully played upon the part to be treated, will not produce so uniform an anæsthesia as a saturated pledget of cotton wool carefully adjusted. Speaking generally, a globular pledget introduced on forceps is not so efficacious as one spindle-shaped. A spindle-shaped pledget, from an inch to an inch and a half in length, can be conveniently made by lightly wrapping absorbent wool round the tapering end of a whalebone probe, which, after being dipped in an eight-per-cent. solution of eucaine, can be slipped into the nose so as to lie parallel with the turbinate body in its entire length, the pledget being steadied with the points of forceps while the whalebone probe is withdrawn. The authors state that they find that the anæsthesia thus produced is sufficient for the application of the galvano-cautery, or even to do a partial turbinectomy. To the tonsils, fauces, soft palate, or pharynx the drug is best applied by swabbing with pledgets of cotton wool. For endolaryngeal operations anæsthesia was obtained by dropping the drug on to the part to be treated from a curved syringe.

These different applications require more care, and perhaps more trouble, than general haphazard spraying, but the trouble taken is amply repaid by the anæsthesia produced. Moreover, sprays involve a waste of the drug, and in the case of cocaine are no doubt responsible for some of the toxic cases; brushes can not be cleansed, and on that ground are to be condemned, for it must be within the experience of all, the authors think, to have met with patients who suffered with toxic symptoms under cocaine which could not be entirely attributed to the drug.

Regarding the general action upon the circulation, the authors found that the pulse was not materially affected in either rate or character by the solutions used, and they state that so far they have not met with a case in which the drug by itself influenced the cardiac action.

Respecting the local action, the application of a five- or ten-per-cent. solution of cucaine to the mucous membrane will provoke hyperæmia as an immediate result; this, in the majority of cases, is but an initial blush, rapidly passes off, and gives place to an ischæmia, which, as seen in the nose, is generally less marked than that produced by cocaine. Upon a further application there is no recurrence of hyperæmia, and the ischæmia may be increased. The authors state that in no case have they met with excessive or unexpected hæmorrhage following operations done under eucaine anæsthesia, such as is not uncommonly met with after the use of cocaine; this, they think, is no doubt accounted for by the action of eucaine upon the peripheral vessels already alluded to.

Concerning salivation, the authors found that eucaine in the presence of an acutely inflamed tissue, such as acute amygdalitis or pharyngitis, active laryngeal tuberculosis, etc., was followed by an increased flow of saliva; but in the presence of a diseased but not actually inflamed tissue, such as hypertrophied tonsils, etc., this effect has not been noticed. The increased flow of saliva is but initial after the first application, and a further application can be made without leading to similar effects. In the absence of any better explanation, the authors think it seems reasonable to associate the increased salivation with the initial hyperæmia.

Regarding the after-effects, the disturbances of sensation following the anæsthetic action of the drug, more particularly in the case of the pharynx, are, according to the authors, not only less unpleasant and less marked than those produced by cocaine, but more transient, and, generally, after the lapse of an hour from the time of application, the subjective sensations may be described as normal; furthermore, those who have experienced the effects of both drugs have expressed a decided preference for eucaine.

In regard to the toxic power of the drugs, the authors state that in some cases operations had to be abandoned on account of an idiosyncrasy for cocaine; afterward, however, they were rendered practical under eucaine.

The authors refer to an article on this subject by Dr. J. Gibb, which was published in the *Philadelphia Polyclinic* for January 23, 1897, in which his observations on the drug are summed up as follows: 1. Eucaine is equal to cocaine in its anæsthetic effects. 2. Eucaine is nearly, if not quite, as effective as cocaine in reducing engorged turbinates. 3. Eucaine is superior to cocaine in that it is much less likely to produce toxic symptoms. 4. Eucaine is superior to cocaine in that it produces far less unpleasant subjective symptoms, and especially is this true in the pharynx.

The authors conclude that if eucaine was to be of no further service than to act as an efficient substitute in cases such as they have mentioned, in which an idiosyncrasy for cocaine precluded an operation, even then this new local anæsthetic could not be regarded otherwise than as of importance.

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Original Communications.

GENERAL CONSIDERATIONS REGARDING SELF-INTOXICATION.

By H. A. HAUBOLD, M. D.,
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The theory of self-intoxication has found but little acceptance on the part of the mass of the medical profession. While this fact is susceptible of many explanations, the one offered by Albu, of Berlin, is perhaps the most reasonable—that is, that "the general practitioner is but little versed in chemistry, or, more specifically, in physiological chemistry, a knowledge of which is quite necessary to an understanding of the subject." In the light of recent investigations regarding the poisons developed in the body spontaneously as the result of the processes grouped under the general head of metabolism, this subject becomes one of considerable importance. Indeed, Albu ventures the prophecy that ultimately the science of medicine will owe as much to physiological chemistry as it now does to bacteriology. Certain it is that no conception of the mode in which poisons act, be they introduced into the body or developed within it, is possible unless this conception evolve itself from the lines laid down by physiological chemistry. The development of the science of bacteriology has led to the belief that infection of itself constitutes only a portion of the ætiological factors that are concerned in the production of disease. A not unimportant portion is the result of intoxication. In the majority of instances intoxication is secondary to infection, the intoxicants being the products of infection; but we are also justified in the conclusion that primary intoxication is a frequent cause of diseased conditions of itself, and that poisons may develop in the body. This is illustrated by the poisons developed in the saliva of poisonous snakes, animals affected with rabies, in tetanus, etc., where the harmful material exists as an albuminoid; facts that it is easy to conceive justify the belief that the products of metabolism are capable of standing in a causative relation to diseased conditions just as readily as do bacteriological organisms.

It must be admitted that the facts in possession of the scientists, tending to substantiate positively the theory of self-intoxication are as yet small in number. Still, these facts, few as they are, are sufficiently well established to constitute a firm basis for the extension of observations and experimentation.

Self-intoxication means self-poisoning. It consists of a poisoning of the organism with the products of metabolism, which exist normally, but are present in excessive amount, or are abnormal, this latter class again being subdivided into those that undergo further modification and those that exist in the body only in minute quantity. It is not difficult to conceive the possibility of the accumulation of self-intoxicants in the body when it is borne in mind what physiological changes nutritive constituents undergo from the time of their introduction into the mouth until they are consumed and thrown off as excrementitious substances. In the gastro-intestinal canal they undergo certain changes that render them assimilable; they are taken up by the blood and lymph, and undergo various other chemico-physiological changes, such as oxidation, splitting up of their elements, which unite again in different proportions until they no longer bear any resemblance to their original form. The end products of disassimilation are most of them simple compounds, such as water, the inorganic salts, urea, and the urinary salts; but the intermediate products of metabolism are far more complicated and exceedingly difficult of observation. They possess great interest because of the belief that when they accumulate in the body they stand in a causative relation to disease. These intermediary products are not normally excreted to an appreciable extent; but under pathological conditions, when the farther physiological conversion into end products is disturbed in a given organ or tissue, they accumulate in the blood and act as self-intoxicants. Gautier has called these intermediate substances leucomaines, and believes them to be the cause of a large number of pathological conditions. Poehl offers a concise conception of the process: "In the course of tissue oxidation there occurs an accumulation of incompletely oxidized products of the retrograde metamorphosis of the albuminoids, which results in self-intoxication."

In the light of more recent observations this is to be supplemented by the statement that disturbances of metabolism resulting in self-intoxication are not limited to the albuminoids, but that grave disturbances are also the result of the accumulation of intermediary products of the fats and carbohydrates. But further than this, it is held that in the long chain of physiological changes that the nutritive constituents of the body undergo in their function of maintaining so-called life, there are produced always not only useful substances but also a certain amount of poisonous ones. Normally the latter exist only in small quantity and are quickly either eliminated or undergo further changes which render them inert. In the event of a disturbance of the normal conditions just alluded to these poisonous substances accumulate in the body, and self-intoxication takes place. The toxicants circulate in the blood, alter its character, and thus act as irritants upon the various organs. If this irritation is transitory, acute auto-intoxication occurs; if the disturbance be frequently repeated, chronic self-intoxication is the result.

The most enthusiastic exponent of the theory of self-intoxication, von Jaksch, of Prague, has attempted to differentiate the toxicants developed "*de novo*" in the body from those poisonous substances introduced from without by designating the former by the name of endogenous intoxicants, and classified them in the following manner:

I. Retention toxines developed as the result of normal tissue consumption and accumulated in the body as the result of obstruction or more or less complete destruction of the avenues of excretion.

II. Noso-toxines, which are developed in the body as the result of pathological processes which change the character of metabolism so that noxious in place of harmless products are the result.

This group is again subdivided into—(*a*) Those that occur in the body as the result of spontaneous alteration of nutritive substances (abnormal changes that the fats, carbohydrates, and albuminoids undergo) and develop diseased conditions, and (*b*) those diseases that are the result of modifications of metabolism produced by bacteria.

III. Self-intoxicants that occur as the result of the presence of an abnormally large quantity of poisons which normally exist in the body to a slight extent, or poisons that are the result of modifications in the character of normal products that render them noxious.

Albu takes, apparently, reasonable exception to this classification on the ground that von Jaksch's subdivision of self-intoxicants into noso-toxicants and again self-intoxicants is unnecessary, because the substances referred to as self-intoxicants *par excellence* are already included in the class designated under the term noso-intoxicants. A clearly defined classification of these newly born poisons is, as can be readily seen, attended with considerable difficulty, chiefly for the reason that the processes believed to stand in a causative relation to their existence are as yet but little understood.

Von Jaksch, Kobert, and Schwalbe, as well as Bouchard, include under the head of self-intoxicants all the diseases that are the result of a contagium vivum, *i. e.*, the infectious diseases. While it is true that the evidence at our disposal to-day points to the justification of the belief that the majority of the symptoms accompanying infectious diseases are produced by an intoxication with products of modification of the substances that are concerned in metabolism, and that these modifications are caused by micro-organisms, these intoxications are, nevertheless, the result of matters introduced from without, and are genuinely exogenous poisons. From this standpoint all diseased conditions that are caused by specific organisms should be excluded from the list of those that are the result of self-intoxication.

Still it must be admitted that the products of fermentation and decomposition attendant upon digestion that give rise to poisonous substances in the organism are dependent upon the introduction of bacteria. But this distinction is permissible, that self-intoxication dependent upon the bacteria of infectious diseases produces specific intoxication; while the other is dependent upon conditions that constantly exist in the body and are to be considered as physiological. Indeed, it is not by any means certain just how much bacteria are concerned in the production of these physiological poisons.

It is certain that the causes that produce self-intoxication in disturbances of metabolism, such as anomalies in the changes that albuminoids (gout) or carbohydrates (diabetes) may undergo, are to be looked for in some modification of degree of change that these substances undergo in their assimilation or change into excretions. It is this that renders the division of this subject into clearly defined classes exceedingly difficult. Still, if the conditions that obtain in the infectious diseases are excluded, something toward simplifying the subject has been accomplished. It would seem that so far as the study of self-intoxication has gone, the classification submitted by Albu is perhaps the one most readily made use of by medical men.

I. Self-intoxication the result of modification in the functions of organs, in which class belong those resulting from disease of glands, with or without structural changes; of the latter kind, simple atrophy being by far the most frequent, as the myxœdema resulting from atrophy of the thyreoid, pancreatic diabetes, acute yellow atrophy of the liver, and Addison's disease, which latter is probably the result of structural changes in the suprarenal capsules. In brief, diseases caused by the arrest of function of those organs that are now considered to be concerned in the destruction of poisonous and noxious substances that develop in the process of metabolism.

II. Self-intoxication from anomalies in the general process of metabolism without any discernible localization. That is, diseases in which the intermediary products and the products of retrograde metamorphosis find their way into the circulation. To this class belong diabetes, in a general sense, gout, oxaluria, etc.

III. Self-intoxication from the retention of the physiological products of metabolism in the several organs. In this class are included the phenomena coincident to the destruction of large surfaces of skin, as by burns, poisoning with CO_2, in asphyxia, uræmia, eclampsia, etc.

IV. Self-intoxication the result of the overproduction of physiological and pathological products of the body: hydrothionæmia, ammoniæmia, acetonuria, diacetonuria, cystinuria, etc.; also the coma of diabetes and carcinoma, etc. Between the third and fourth class, and belonging with apparently equal propriety to either of them, is the class of self-intoxicants that originate in the gastro-intestinal tract as the result of acute and chronic disturbances of digestion, unattended by organic changes in these organs—*i. e.*, gastric and intestinal vertigo, asthma dyspepticum, dilatation of the stomach, chronic constipation, intestinal obstruction, and strangulated hernia, attended with various neuroses dependent upon irritation of the central nervous system, skin eruptions, etc.

It is only necessary to glance at the large number of varied signs and symptoms that we are now justified in ascribing to self-intoxication to readily understand how impossible it is to explain them all from one standpoint. It is the office of future observation and investigation to arrange them systematically, when cause and effect shall be more correctly standardized. The more extensive our knowledge of self-intoxication becomes, the more readily will it be possible to discover errors in the classification given above. At present there is a tendency to include conditions in the class called self-intoxications that do not properly belong there. The tendency seems to be to denote as self-intoxications those diseased conditions that hitherto it has been impossible to classify. Nevertheless it appears reasonable that a considerable number of disturbances of nutrition and diseases of the blood, like chlorosis, pernicious anæmia, leucocythæmia, the cachexia of carcinoma, purpura, morbus maculosus, scorbutus, hæmophilia, etc., will ultimately be properly included in the class of diseases the result of self-intoxication. It is these facts that make a clearly defined classification of self-intoxication well-nigh impossible at the present time, and emphasize the necessity of a closer study of its phenomena. The field of self-intoxication embraces the entire domain of pathology. Although it is as yet chiefly important to the clinical observer and the neurologist, the surgeon and gynæcologist of the future will no doubt derive much aid and guidance from it. In the present state of our knowledge it seems expedient to consolidate the subject and consider it from the following standpoints:

I. The origin or source of self-intoxication.

II. The conditions that determine its development.

III. Its manifestations.

Self-intoxication takes its origin from the following parts and organs of the body:

I. *The skin*—the phenomena following severe burns of large surfaces.

II. *The lungs*—carbon-dioxide poisoning from interference with respiration.

III. *The kidneys*—uræmia and eclampsia.

IV. *The suprarenal capsules*—Addison's disease.

V. *The gastro-intestinal tract*—to this class belong the various constitutional disturbances consequent upon diseases of the stomach and intestines.

To this may be also added—

(*a*) *The liver*—acute yellow atrophy, icterus gravis, and cholæmia.

(*b*) *The pancreas*—diabetes mellitus.

VI. *The thyreoid gland*—myxœdema, cachexia strumipriva, and possibly Basedow's disease.

The second standpoint from which self-intoxication is to be considered is the conditions which determine its development. Self-intoxication occurs only under conditions that never exist in the body normally; still, very little deviation from the normal is required for its development. Intoxication of the organism occurs only when secreting or excreting organs that are also the avenues by which noxious substances are thrown off are either obstructed or insufficient, or when the nature and quantity of the poisonous substance are such as to make it sufficiently intense to exceed the normal variations.

Organs of this nature may be stated as follows:

I. *The Skin.*—Beyond the elimination of gases by the skin the excretion of sweat is to be considered. This substance contains products of disassimilation, the retention of which is productive of no slight disturbances. It is well known that persons who have more than two thirds of the surface of the skin destroyed or rendered impervious die in a short time. The elimination of water through the skin bears a ratio to the elimination of water by the kidneys, a fact so well known that even the laity make use of the skin as an avenue of elimination. The sweat not only contains water, but a number of other substances are thrown off with it, such as inorganic salts, albuminoids, urea (in uræmia and in cases of cholera asiatica, in crystalline form), also fatty acids, cholesterin; in cases of diabetes, glucose; in icterus, the coloring matter of the bile; in bromidosis, leucine, tyrosine, and ammonia, etc. Substances used as therapeutic agents are frequently eliminated by the skin. There can be no doubt that the skin is to be considered as an important excretory organ, modifications of its function having a no slight bearing upon the condition of the general system.

II. *The Lungs.*—The importance of these organs as eliminators is sufficiently recognized to preclude discussion on this point. The expired air contains a number of gases that are the products of retrograde metamorphosis. In disease the admixture of abnormal substances can often be readily recognized by the sense of smell, such as the fruit-odor of acetone in diabetes, the sweet breath of general septic infection, the ammonia in ammoniæmia, and the hydrogen sulphide in hydrothionæmia, etc.

III. By far the most important excretory organs of the body are the kidneys. These organs are capable of an immense amount of labor and continue to perfrom their function even though they are diseased throughout their greater part. So long as the epithelium is intact they continue to separate the excretory substances from the blood, which are then taken up by the water from the glomeruli and washed down the ureters into the bladder. In this manner the body is enabled to rid itself of a large number of poisonous substances which the kidneys remove either unchanged or in some way modified in composition. Indeed, they seem to a certain extent capable of a poison-destroying function, inasmuch as they change the composition of poisonous substances so as to render them inert. A number of chemical changes take place in the kidneys, such as oxidation, reduction, splitting up of elements, pairing, etc. Of course it is not absolutely certain how much of this takes place in the kidneys themselves; whether, for instance, the pairing of glycoronic acid and hippuric acid takes place in these organs.

The kidneys frequently react upon poisonous substances with either functional or organic disturbances of more or less severity that manifest themselves by the presence of albumin and casts in the urine, a condition recently characterized by the term toxic nephritis, which has its anatomical expression in a coagulation necrosis. This condition is frequently observed in the course of acute infectious diseases, diarrhœas of infants, cholera asiatica, ileus, etc., where the irritant originates from the contents of the intestine. Without doubt it will soon become possible to show that the nephritis and albuminuria coincident to icterus are dependent upon the presence of the constituents of the bile in the blood. Senator attempts to show that the origin of the poison which acts so perniciously upon the kidneys is not the general contents of the intestine, but incompletely converted albuminoids (propeptones), which form in the gastro-intestinal canal whenever there occurs a disturbance of digestion. Still, this is a detail which is only of minor importance to the clinician.

IV. *The Digestive Tract.*—It is well known that nutritive and other substances introduced by the mouth are, because of their insolubility, never absorbed, and are thrown off from the body in the fæces, together with a number of excrementitious materials. It is also generally known that certain substances that are introduced into the blood hypodermically are eliminated by way of the gastro-intestinal canal. There is no doubt that the stomach and intestine are vicarious channels of elimination for the urea that accumulates in the blood in cases in which the kidneys from disease are incapable of performing this function. If the emptying of the gastro-intestinal canal is arrested by one of the frequent disturbances these organs are subject to, such as intestinal atony, volvulus, hernia, etc., the excrementitious substances they are concerned in eliminating are retained in their lumen and reabsorbed.

V. *The Liver.*—An important function that it is believed this organ is endowed with is its ability to separate from the blood of the portal system those toxic substances that have accumulated in the circulating fluid in its passage through the absorbing organs of the intestinal canal. The liver is to be compared to an enormous reservoir or filter that stands on guard between the digestive tract and the heart, in which under normal conditions all abnormal products of tissue metabolism are separated from the blood. If the liver, through organic disease or functional disturbance, has this ability impaired, toxic substances gain access to the general circulation. It is this sentinel duty of the liver that is of the greatest possible importance in the study of self-intoxication.

There is another not unimportant factor to be taken cognizance of in the consideration of the phenomenon of self-intoxication, and this is what is called "individual disposition." Albu says: "Reviewing the large number of cases of self-intoxication, notably those of intestinal origin, the conclusion obtrudes itself that the conditions favorable to intoxication should occur far more frequently than is actually observed in practice. It is indeed only infrequently met with by persons quite conversant with its manifestations." Albu further states that among the many hundred cases of various diseases under his personal observation, of which a large number were those of acute and chronic intestinal diseases, and while his efforts were constantly directed toward the recognition of self-intoxication, this condition was positively diagnosticated only in a relatively small number of instances. "There is to my mind no doubt whatever," he goes on to state, "that self-intoxication develops only on the ground of individual disposition, and that this disposition is a neuropathic one. It would certainly appear that the complex symptomatology of self-intoxication can find its only reasonable explanation in the nervous system. This would suggest that the phenomena observed are reflex in character. But this does not seem to be the case. It is known that the action of therapeutic agents frequently is modified in certain individuals by what have been designated as idiosyncrasies, as obtains in the exhibition of iodides, mercury, antipyrine, bromides, etc. The eruptions following the administration of certain drugs occur only in some persons whom we have a right to suppose are so disposed."

That neurasthenic individuals are most susceptible to acute infectious diseases is true enough, although no scientific explanation of this fact is at our disposal.

Indeed, the part that the nervous system plays in self-intoxication has been dwelt upon by Borgherine, who supports his premises by relating a number of cases of self-intoxication in persons afflicted with not only neurotic temperament, but he further states that lesions of the central nervous system favor the occurrence of this condition.

Borgherine reports a case of locomotor ataxia in which the slightest error of diet was followed by exacerbation of symptoms; also a case of hemiplegia from cerebral hæmorrhage in which constipation caused clonic spasm of the affected side, headache, etc. Of course, as regards neurasthenia, the possibility that the self-intoxication may stand in a causative relation to the former, rather than the reverse, is to be considered. It is certain that the occurrence of neurasthenia is frequently observed as a sequel to chronic constipation, dilated stomach, etc. The relations that neurasthenia and intoxication bear to each other are quite complex and difficult to summarize clearly and definitely; that they have important bearing upon each other is unquestionable.

The third general standpoint from which the subject of self-intoxication is to be considered is the manner and localization of the effects of the toxic substances upon the organism—in other words, its symptomatology, or, as stated in the original classification, its manifestations. It is proper to state here that no other subject in the entire field of pathology presents a more complex and varied number of symptoms than do the self-intoxications. Although a single organ is frequently at fault, the disturbances resulting are usually of so general a character that it is quite impossible to designate a series of symptoms as typical.

The manifestations occur in the following organs:

I. *The skin*—(*a*) in the form of alteration of color, such as anæmia, icterus, and bronzing; (*b*) exanthematous and erythematous eruptions, urticaria, dermatitis, etc.

II. *The muscular system*—polymyositis.

III. *The digestive tract*—anorexia, vomiting, nausea, eructations, diarrhœa, constipation, gastric and intestinal colic.

IV. *The genito-urinary system*—albuminuria, hæmaturia, hæmoglobinuria, bile-colored urine, acetonuria, diacetonuria, oxaluria, etc., and the presence of various alkaloidal substances.

V. Most frequent of all are, perhaps, the manifestations in the central nervous system, occurring as they do in varying degree, from the most transient to the severest and most prolonged symptoms—cephalalgia, vertigo, syncope, insomnia, anxiety, stupor, coma, irritability, delirium, restricted spasm and general convulsions, epileptoid seizures, paralysis, and not infrequently hypochondria, melancholia, and mania.

The following disturbances of various organs are to be properly considered as secondary to and dependent upon disturbances of the central nervous system:

(*a*) *Heart*—brachycardia, tachycardia, and arrhythmia cordis. (*b*) *Respiration*—dyspnœa of various kinds—such as stertor and Cheyne-Stokes respiration; also modifications of the odor of the expired air, sulphureted hydrogen, etc. (*c*) Temperature—as the subnormal of impending collapse.

VI. And, lastly, the large number of cases in which self-intoxication is not accompanied by any manifestations in a given part or organ, but has its expression only in a general disturbance of metabolism—such as chlorosis, pernicious anæmia, leucæmia, the various cachexias, diabetes, uric-acid diathesis, etc.

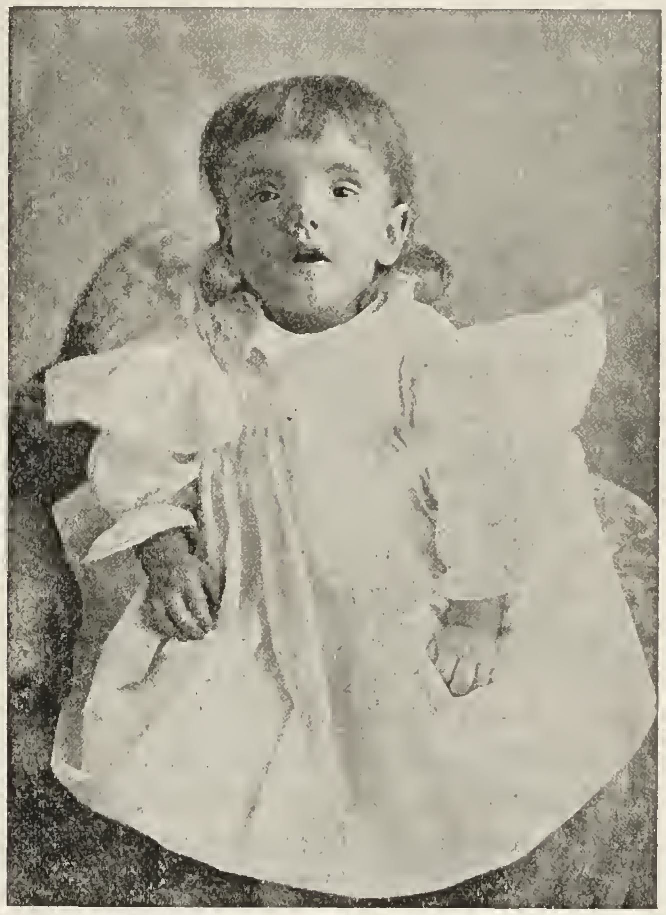
Medical Signers of the Declaration of Independence.—According to the *Charlotte Medical Journal*, five practitioners of medicine signed the Declaration of Independence: Benjamin Rush, of Philadelphia, Lyman Hall, of Georgia, Oliver Wolcott, of Connecticut, and Josiah Bartlett and Matthew Thornton, of New Hampshire.—*Medical News*.

A CASE OF
ANGEIONEUROSIS OF THE FACE.

By W. H. HAYNES, M. D.,
BROOKLYN.

In connection with Dr. Robert Lewis's very interesting case of angeioneurosis of the tongue, published in the *Journal* for October 9, 1897, illustrating so well the terminal irritative reflex action of different endings of the same nerve—namely, the chorda tympani branch of the facial nerve—I will report a case where irritating the gustatory filaments caused coincidently dilatation of the capillary blood-vessels and enlargement of one side of the face.

Ethel W., aged nineteen months, has a marked neuropathic ancestry, as shown by the following family history, of epilepsy in paternal grandmother; maternal sister subject to "fits"; father is "nervous," and mother "flighty." The mother's first child died of meningitis; the second has a large rhachitic head; and this, her third child, besides a large rhachitic head, presents the features of congenital hemifacial hypertrophy, well shown in the accompanying photograph. She was born after a normal labor and unimportant gestation, brought up on condensed milk; teethed, talks, and walks naturally for a child of her age. Infant is considered a bright child and otherwise well, except for the following peculiarity, for which she was referred to my clinic for nervous diseases at the Central Throat Hospital, Brooklyn—namely, that immediately after taking into her mouth any sweet or sour substance, besides exciting the flow of saliva, it causes the whole of the larger or right side of her face to become scarlet and noticeably enlarged, and subsiding very soon after the removal of the determining cause in the mouth, as I have demonstrated more than once by personal experiment. I have also noticed the same phenomena



occur when she yawns or gapes, but at these times the occurrence is only momentary.

In this case we have shown just the reverse of what took place in Dr. Lewis's case—internal buccal or gustatory irritation with external congestion and swelling—whereas his case showed the result of external stimulation and internal congestion and œdema. This is due probably, as he very well explains, to the irritation applied to the auricular end of the chorda tympani branch of the seventh cranial nerve being carried around to the tongue after it has joined the lingual branch of the fifth nerve, and supplying nutrition, sensation, and taste to the tongue, in this instance overwhelmingly and like we see in cases of facial neuralgia, of excessive lacrymation, nasal secretion, etc., due to overstimulation by reflex action through the same nerve centre; whereas in the case above reported the irritation was conveyed through the buccal filaments of the lingual and chorda tympani nerves to the nerve centre, and thence out through the ganglion, vaso-dilator, or sympathetic branch of the fifth nerve, causing excessive dilatation, congestion, and swelling of the face. The converse of this condition is seen in cases of progressive hemifacial atrophy, when, besides the facial wasting, weakness, and pallor, we have atrophy of the tongue, together with the loss of taste on the same side.

401 Bainbridge Street.

RETRODEVIATIONS OF THE UTERUS:

INCLUDING EXCESSIVE MOBILITY, BACKWARD DISPLACEMENTS, ADHERENT AND NON-ADHERENT RETROVERSIONS AND RETROFLEXIONS; EXCLUDING ALL PELVIC SUPPURATIONS.

By EUGENE COLEMAN SAVIDGE, M. D.,
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Diseases of women have only recently been formulated into a science. The generation has not yet passed away whose curriculum knew them not. Almost daily do we hear mothers aver that in their youth girls did not have womb troubles, and frequently do we see even lives sacrificed to this maternal fidelity to tradition.

It is startling to think that prior to our generation no woman with an intraperitoneal rupture of an ectopic-gestation sac or a pyosalpinx, or with an axial rotation of an abdominal tumor, was ever saved from death; and that no physician or surgeon ever knew the cause of such deaths.

The evolution of this young science has been from non-action to the extreme of radical surgery, and back again to conservatism, so that even our leaders can be quoted differently in different decades of their practice. Nor can it be said that gynæcology has yet entirely crystallized.

My paper is an attempt to define a malady I have found nowhere definitely described.

All authors agree that retrodeviation, as a mechanical condition, often gives no symptoms, and is discovered by accident. Let us distinguish this mechanical condition sharply from retrodeviation as a symptom—as part of a complicated condition involving the whole organism.

This complication of symptoms—this unnamed malady—has to date borne the label of the isolated mechanical symptom of displacement, which surgeons have attacked as a cause, neglecting entirely the more important phases of the matter.

My argument is that this malady—called after one of its symptoms—is the most prevalent ill among women; that it contains a sure future menace; that all measures for its relief, operative and otherwise, are unsatisfactory; that it is always a symptom of enfeebled muscular power, and almost always an accompaniment of enteroptosis, or downward displacement of the abdominal viscera; that in treating it mechanically as an isolated, independent condition we are simply lopping off the sprout and leaving the root; and, most important of all, that it can be largely prevented when both laity and profession appreciate its frequency, its gravity, our limitations in coping with it, and the ease with which it can be prevented.

Frequency.—Ott, of St. Petersburg, places it at twenty per cent. of all female ills. Winckel says nineteen per cent. Sänger found a hundred and nine cases in seven hundred sick women. In a thousand women, presenting themselves to me for gynæcological treatment I have found two hundred and forty cases of retrodeviation.

Gravity.—It gives symptoms only when there is congestion. These symptoms are too well known to merit space here. We all know that from simple discomfort, dragging, or sterility, these symptoms may rise to a severity which makes life intolerable.

Choice of Measures.—Of the far-reaching, life-shortening results of neglect of the condition I will speak later. As the immediate disability is slight at the beginning, the patient may endure and neglect it. If she is wise, she will give it attention. We can attend to it either by treatment or by one of the several operations now being done for the condition.

"Treatment," as a term for my paper, includes any necessary repair work—such as curetting and sewing torn or overstretched tissue—and all the familiar routine of position, abdominal bandage, pessary, massage, douche, counter-irritation, tampons, *régime,* and medication. Distinguish sharply between these reparative operations included in "treatment" and the specific surgical devices for the mechanical relief of retrodeviation.

Let us analyze the possibilities of relief before a woman with retrodeviation. I begin by excluding all curable cases in which the womb can be held in place with a pessary until the ligaments have recovered their tone. Unfortunately, these cases are but too few.

Mundé cured with a pessary only about twelve per cent. in his thousand studied cases.

In the remaining eighty or ninety per cent. of cases, the displacement can not be reduced, and here lies the choice between recurring treatment and operative measures.

Recurring Treatment.—In the non-reducible cases, with or without adhesions (but without pus always understood), treatment lasting from one to three months will often bring entire relief from symptoms, although the womb remains to the rear. Martin teaches that the rear position in these stubborn yet comfortable cases, after treatment, may be regarded as natural for these women.

The treatment has relieved congestion, improved the tone of the ligaments, strengthened the heart power; in other words, it has improved the vitality and muscular condition. The woman is cured, though her mechanical symptom remains. But note that the symptoms recur when the congestion recurs—that is, when vital and muscular power fails. These recurrences may come in a few months or years, or the woman, properly instructed, may conserve her vital power and remain cured through life. The womb to the rear predisposes to renewed congestion, of course; and this knowledge, coupled with the prospect of future treatment, frequently influences the choice of surgical measures to end the trouble definitely.

Surgical Possibilities.—Let us consider what surgery can do. If the case is one of the non-adherent, uncomplicated retrodeviations—one of the lightest touches of the trouble—the surgeon does the Alexander operation. He makes two incisions in the woman's abdomen, and pulls the womb forward by shortening the round ligaments. If the ligaments are not atrophied; if there has been no inflammation surrounding their sheaths; if there has been no mistake about the health of the tubes and ovaries; if one of the ligaments does not break and compel the operator to open the abdominal cavity; if the suture lines do not suppurate; if the woman has no hernia afterward, as some have; if the ligaments do not stretch again, as ten per cent. do; then the woman who had only a non-adherent retrodeviation, having safely taken these risks, is cured of the mechanical symptom of retrodeviation, and is in little danger of having any pregnancy thereafter complicated as a result of her operation.

But does this in any way attack the cause lying behind the symptom? Is the enteroptosis helped? Yes; for the rest in bed, the special care given a patient after an operation, the mechanical relief from congestion, the restored vitality, and the mysterious change in nutrition which follows the use of the knife and curette, all make for its betterment; and this is why the operation so often succeeds. For the same reason a simple curetting often gives such brilliant results. But the shortened ligaments will stretch again, as they stretched at first, in just those ten per cent. of cases in which the cause behind the mechanical symptom is not much helped. An eminently able and frank paper read by Edebohls before the Geneva Congress unintentionally proves this particular point. Out of a hundred and fifteen Alexander operations reported, seventy-seven were uncomplicated anatomical successes. The remaining thirty-eight cases show an instructive list of hernias, failures, necessary openings of the abdominal cavity, and, especially to my point, twenty-five cases in which movable kidneys were found after the operation.

In this connection recall how infrequently males have floating kidney; how frequently it is found in female neurasthenics; recall Professor Polk's recent statement that much of what was formerly supposed to be "spinal irritability" in girls is now known to be movable kidney. Will not, therefore, stitching the kidney to the abdominal wall be the next radical amendment to the Alexander operation to perfect it?

Or, perhaps the operator does vagino-fixation or vesico-fixation, an operation now being abandoned. He stitches the womb to the vaginal wall or bladder, entering the peritoneal cavity, often by design, sometimes by accident. Here the woman, having taken the risk of a vaginal section—a life-endangering operation for a disability which is not life-threatening—finds that even if her symptoms of the malady do not recur she has to face a possible Cæsarean section, and almost sure difficulty in labor, should a future pregnancy occur. The surgical mind has here busied itself entirely with mechanical considerations, and not with the cause of the condition.

Or the operator may open the abdomen, break up adhesions, and attach the womb to the abdominal wall, after the method of Kœberlé, Koltz, Olshausen, Sänger, Leopold, and Kelly. Again we have a life-endangering operation for a condition not life-threatening. Here, when the woman has recovered from the operation with the mechanical symptom removed, she faces possible rupture of the uterus or other complication in labor in the event of pregnancy. Again the surgical mind has busied itself entirely with mechanical considerations, and not with the cause of the condition.

Or the operator may open the abdomen from above or below and do the Polk, Wylie, or Dudley operation, shortening the ligaments within the abdomen. While these operations—admirable in cases accompanied by pus—may not complicate a future pregnancy, are they not also, when done for retrodeviation, life-endangering operations for a condition not life-threatening? Of course, I am not referring to those inflammatory pelvic exudates which justify life-endangering operations and form another subject than that of my paper. I call life-endangering any operation with a recognized mortality.

These, with a few less practicable procedures, are the best that human ingenuity has been able to devise for the condition. Even the most limited in application and the least dangerous, the "ideal Alexander," risks an abdominal section in case of accident or mistake.

Admitted, then, that twenty per cent. of all woman's ills can only be handled surgically with the drawbacks and dangers above outlined; admitted, also, that the most thorough "treatment" will often yield only a more or less temporary relief, is not this malady an extremely unsatisfactory one for the patient and for the profession?

The Future Menace.—The trouble in getting rid of this malady hardly compares with the danger of neglecting it. I shall not speak of the immediate harrowing symptoms; they are blessed if they force a woman to a cure. I pass, too, the aggravation of the pelvic trouble by neglect, and speak of the insidious robbery of the last decades of life that results.

I have been strongly impressed with the frequency of renal insufficiency and lithæmia in pelvic diseases of women, especially our subject malady, and I am glad that men like Mann, of Buffalo, and Etheridge, of Chicago, are calling attention to it. . These patients, because of the predominant uterine symptoms, are seen only by the gynæcologist during the period when the insidious vital changes can be checked. If gynæcologists, in their abandonment of medicine for surgery, neglect such important matters, the laity and profession will awaken to the necessity of regarding them simply as measures to be prescribed by men of higher rank when local attention is called for.

The gynæcologist, as a rule, sees women only during active sexual life. The physician guides them at the two extremities of life. The gynæcologist sees the period of infiltration from congestion; the physician sees the resulting induration. If, in youth, the tendency toward congestion has not been checked simply because the girl looked fat or was not ill in bed; if, later, the gynæcologist finds a mechanical condition and applies simply a mechanical remedy; if, finally, the physician, without warning or protest, signs death certificates for renal insufficiency and degenerated circulatory system from long-standing passive congestion in women—then, gentlemen, some one has missed the profession's highest province: recognizing a tendency toward disease and avoiding it. One man will find no heart disease until there are murmurs and dilatation; another will recognize no kidney trouble until he gets low specific gravity, albumin, and casts. Of what use is his diagnosis then?

Reciprocal Cause and Effect.—My argument is that muscular and vital debility brings about the malady labeled retrodeviation; conversely, that this malady brings about muscular and vital debility; and that this reciprocal relation—this malady of passive congestion and engorged venous system—leads to cardiac, renal, and arterial changes that materially shorten life. I maintain it by adducing the following well-known facts:

First: The portal circulation, like the general circulation, depends upon muscular power of heart, arteries, arterioles, veins, and lymphatics. Unlike the general circulation, it goes through two sets of capillaries. Women who lace tight and are constipated are exceedingly prone to portal and, consequently, to uterine congestion. A displaced womb is, therefore, another obstruction to a stream already sluggish.

If a cirrhotic kidney enlarges a heart, an equal area of congestion in a displaced womb must likewise react upon this centre of life.

If a slight temporary congestion of throat or nose, not severe enough to raise pulse or temperature, will so powerfully depress the organism, the permanent congestion of a greater uterine area must correspondingly subtract from vitality.

Second: Septic congestion is a conservative process to limit sepsis. Like the hard area around an abscess long after pus has been emptied, a mechanical congestion remains after sepsis has been conquered. Sepsis, however, is not a necessary part of every mechanical congestion. Example, the rectal ache in males. But congestion favors sepsis. Example, enlarged tonsils; also, auto-infection from germs in the normal vagina.

While sepsis brings congestion, reciprocally, a mechanical congestion favors sepsis by making soil for the germ.

Third: There is a vast difference between muscular hypertrophy and venous engorgement—between nutrition and congestion—though both enlarge a part. Example, the liver in the first stage of cirrhosis. Congestion inevitably brings imperfect nutrition. Congestion of the uterus and its ligaments is therefore an enfeebling condition.

Fourth: Enfeebled muscle is readily stretched. Dilated muscle has its function seriously impaired, like the overstretched bow. Example, the overtrained athlete; the gold-beater's worked-out biceps; the dilated heart; the varicosities in the broad ligament in passive congestion.

Fifth: In addition to the columnar base of the vagina, normally a strong muscular tube, the uterus has eight ligaments for its support. These ligaments depend for much of their power upon muscular fibres derived from the external coat of the uterus. Hence these fibres, being continuous with uterine fibres, partake of the health of the uterus itself. A congested, degenerated uterus, therefore, means a similar condition for its supporters, and the heavier the uterus the greater the stretch of the supporters.

Recapitulating.—Will general muscular and vital debility bring about passive congestion? Yes. Will passive congestion enlarge the uterus, weaken its muscular supporters, and allow its displacement? Yes. Reciprocally, will retrodeviation add to the natural embarrassment of the portal circulation, and thus react in aggravating its own condition? Yes. Will stitching the womb forward cure enteroptosis, passive congestion, and arterial degeneration? Not always. Will relieving the congestion, restoring general vitality, cure the malady even though the womb stays to the rear? Nearly always, for a longer or shorter period.

Text-book Definition.—Medical authors say of the causes of retrodeviation that it may be congenital; that it may be due to improper dressing; to the straining and mechanical displacement of constipation and overdistention of the bladder; that it is most frequently due to subinvolution; that it can come from sudden jars and strains.

Referring congenital cases to the ancestry for cause, all of the above-cited causes are referable in the final analysis to the pre-existing reciprocal relation of congestion and muscular debility. Subinvolution itself does not occur where there is good muscular power and no retained secundines.

The Practical Deduction.—Admitting our premises, we are brought to a practical result. We see a duty in preventing this malady; we see a necessity to help those afflicted with it escape the results of its passive congestion.

Prevention.—The first step toward prevention is the enlightenment of the laity. They fully understand the importance of preventing the infectious diseases. They likewise anticipate tooth decay, because they know it is inevitable. As a consequence, alveolar abscesses and rotten teeth are rare with Americans, but very frequent in France, for example, where dentistry is still an American specialty, and the populace "do not interfere with Nature."

If patients will let us keep them well rather than patch them ineffectually when sick, we can take them to maternity in good vitality. The appearance of the veins in the hands, neck, temples, legs will tell what is happening to the veins between the layers of the broad ligaments. We can relieve abdominal pressure from gas and ptosis by bandages and internal antisepsis; we can stir up sluggish circulation; we can prevent constipation.

In childbed we can keep them out of an exclusively dorsal posture; we can even turn them face downward occasionally, and teach them that they are ready to get up only when the womb has involuted, regardless of the tradition. We can curette promptly when necessary, and insist upon immediate repair of damaged tissue. And, finally, as routine, we can begin tamponing under the heavy uterus from the tenth day to complete involution, giving ergot and digitalis at the same time when necessary. I was more than pleased to find that this plan, stumbled upon by me, had been the routine of Dr. W. Gill Wylie for years.

Treatment.—When retrodeviation does come to our charge, its treatment is wearisomely well known. I want, however, to emphasize the benefits from curetting and drainage, even in adherent, non-reducible cases. Remembering that the health of the womb governs the health of the muscular fibres in its supports, the reason is plain.

In addition to the time-honored routine of tampons, etc., I have had marked results from the persistent use of diuretics combined with iron and digitalis. Outdoor air is indispensable; general massage is very helpful; a daily hot bath and rest on the back, relaxing the capillaries and relieving the heart, are wonderfully restorative. Then, copious draughts of water will deplete a portal circulation almost as well as a trip to the springs. After two or three months of such faithful treatment all symptoms usually disappear. But the patients should be told that the same causes will bring a return of the same condition, and that they should therefore see their gynæcologist as often as their dentist; very slight trouble or expense will then be experienced.

The Esoteric View.—Or we can operate at once, on the theory that not understanding the case the discouraged patients will leave us and go to some operator any way. But this would be simply business; not a conscientious search for the best plan of action.

The Alternative.—However, if relief after treatment is absolute, if the recurrences of symptoms are far enough apart, some men conscientiously recommend recurring treatment as, in the long run, better, cheaper, and safer than any of the operations proposed, considering their limitations. No one will dispute that the therapeutic success of operative measures will be greater —even in those cases which must come to the knife— if the general malady has been relieved before the operator sews the womb forward.

Who shall Discriminate?—In some cases nothing but the knife will avail. But, obviously, these cases are not to be selected by those whose convictions lead them to operate on *all* women whose wombs drop to the rear.

66 West Fiftieth Street.

THE ANCESTRY OF THE LUNG.

A REPLY TO DR. MAYS.

By WOODS HUTCHINSON, A. M., M. D.,
PROFESSOR OF COMPARATIVE PATHOLOGY,
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Some weeks ago there appeared in these columns an article by Dr. Thomas J. Mays entitled Pulmonary Consumption viewed from the Standpoint of the Theory of Development, which consisted chiefly of an extended and destructive criticism of a paper of mine upon the same subject read at the late meeting of the American Medical Association. And while I am most unwilling to appear unduly sensitive or pugnacious about such incidents, yet some of Dr. Mays's "corrections" of my statements imply such a gross and disgraceful ignorance upon my part of some of the most fundamental facts of morphology that I feel bound in justice to myself to enter publicly a brief protest and cite a few of the authorities bearing upon the issue he has raised.

I regret to be obliged to say, as a necessary preliminary, that Dr. Mays has scrupulously observed Sydney Smith's celebrated advice to an embryo critic: "Never read a book you are going to review for the press; it might prejudice you in its favor." In his own words, his attack is based upon impressions of my paper, "so far as I am able to gather from an abstract!" (page 422, line 22); and in point of fact this is all he could possibly have seen or heard, for in the crowded state of the programme that afternoon only a ten-minute *résumé* of my paper was given, and it was not published (in the journal of the association) until Dr. Mays's "immediate reply" was already in type. This, of course, explains a number of trifling but interesting little peculiarities in the reply, such as that out of the three positions specially criticised only one was ever taken by me, that the actual subject-matter of the paper whose title and abstract are attacked is only referred to once, and that five sixths of the argument is directed against *another* paper of mine whose conclusions were barely referred to at the close of my *résumé*, but which even ignorance of its existence did not save from the Bersekir rage of Dr. Mays. Of course I have no reason to be surprised to find that with the exception of one important issue the whole criticism is directed against not what I said but what Dr. Mays thinks I must have said or would have been likely to say upon the subject, under the circumstances. Not being in the least touched by it personally, as a feat of constructive imagination, I have enjoyed it greatly, only regretting that so much critical acumen and so extensive a knowledge of biology should be wasted in fighting with shadows. The method is, perhaps, a little unusual in scientific circles, but what of that when the great nervous theory of consumption is in danger?

Now, as to the individual criticisms. First of all, Dr. Mays has been "able to gather" that I took the position "that in the course of this disease (consumption) the human chest loses its flat form and becomes round," which he very properly believes "will not stand the test of critical investigation." I should be surprised if it did. What I actually said was that I believed that the chest of the "flat-chested" and tubercular patient was really round and narrow, as this form was found by actual measurements in seventeen out of twenty cases, and its apparent "flatness" due solely to the sliding forward of the scapulæ and shoulders upon a highly convex, narrow thorax; that this roundness was a *persistence* of the ancestral and embryonic form of chest, from failure to develop into the more expansive, normal "bellows" form, which, to a morphologist at least, is distinctly different from "losing its flat (adult) form in the course of the disease."

My next proposition which Dr. Mays objects to is that "the lungs have the least resistance to disease in virtue of being the youngest portion of the body from a biological standpoint," which he believes to be "so far at variance with the *scientific* status of biological teaching that it requires an immediate reply." And it gets it, in a brief sketch of his own theory of development, concluding with the triumphant refutal, "It will be seen, therefore, that the lungs, instead of being the *youngest* organs, biologically speaking, are really among the *oldest*, and that the brain and higher nerve centres are really the latest and most recent." And, again, at the close of his article, "Phthisis does not, therefore, show a predilection for the lungs at this time, because they represent the youngest biological tissue in the body (*which they certainly do not*), neither solely because the brain and higher nerve centres are the youngest tissues (*which they really are*)." (The Italics are mine.) Here an issue of fact is squarely raised and involves a serious misstatement or ignorance upon the part of one or the other of us. The only means of deciding it lies in an appeal to recognized authorities, and, as the briefest method of doing this, I beg to append a tabular sketch of the succession of organic life with indications as to the point of appearance of the organs in question. The table is a condensation of page 16[*] of Thomson's *Zoology*, and the references supporting date of appearance of organs are given below. They can be duplicated from any recognized text-book upon comparative anatomy or biology. Lang, Wiedersheim, and Thomson are simply chosen on account of convenience and general accessibility.

VERTEBRATES:	
Birds	Mammals.
Reptiles:	
Tortoises	Bronchial (true) lungs.[†]
Snakes.	
Lizards.	
Amphibians:	
Frog; newt	Rudimentary lung[‡] (hollow sacs).
Fishes:	
Dipnoi	*First* appearance of lung[#] (swimming-bladder lung).
Bony fishes.	
Ganoids.	
Elasmobranchs.	
Cyclostomata:	
Lamprey.	
Tunicates.	
INVERTEBRATES:	
Arthropods:	
Insects; spiders.	"The brain of the ant is probably the most marvelous particle of matter in the world."—Darwin.
Crustaceans.	

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[*] *Outlines of Zoology*. J. Arthur Thomson. D. Appleton and Company, 1892.

[†] Wiedersheim, *Comparative Anatomy of Vertebrates*, 1886, p. 257.

[‡] *Ibid.*, p. 258. Thomson, *Outlines of Zoology*, 1892, p. 458.

[#] Wiedersheim, p. 257. Thomson, p. 428.

Molluscs:	
Cuttlefish	Cerebral ganglia.*
Bivalves.	
Worms	*Brain.* †
Cœlenterates:	
Sea anemone; jellyfish.	
Hydrozoa	Central nerve-ring.‡
Sponges:	
Protozoa.	

The reader can now draw his own conclusions as to which of our propositions is most "at variance with the scientific status of biological teaching." This is the chief point of difference between us, and the only one which has compelled me to a reply.

The remainder of Dr. Mays's paper consists first of a triumphantly destructive criticism of a position which he has been kind enough to invent for me, that the lungs upon my theory "ought to be" most liable to tubercle during the first few years after birth, the like of which is nowhere to be found in either of my papers or "abstract." Then the ways having been adequately lubricated by the mangled remains of my theory and scientific reputation, the great nerve theory of consumption is launched majestically down them, and the real motive of the article is revealed. Mortifying as the admission is to my *amour propre,* a dispassionate survey of the relative proportions of Dr. Mays's paper leads me to the humiliating but irresistible conclusion that my luckless name and article have simply been selected as new headlines for another exposition of his well-known and admirable theory. I have long been greatly interested in the theory, and always admired the vigor and ingenuity shown by Dr. Mays in urging it. My only objection is to his waving my dishonored scalp in the air as a preliminary flourish to his latest variation upon the theme.

And it was so unnecessary, for not only do our respective theories not conflict, but I am prepared to accept a large part of that view of the causation of phthisis which Dr. Mays has so ably and convincingly advocated. It only lacks definiteness, for to say that the "error lies in the nervous system" on account of the "profound functional strain" upon it at this period is first simply to say that unfavorable states of the environment, which must communicate themselves through and ultimately fall upon the great responsive and co-ordinating tissue group, are the chief causes, and, secondly, does not explain in the least why the area of only one great cranial nerve is so overwhelmingly liable to disturbance. Why should the pneumogastric be affected rather than the trifacial or the glossopharyngeal, for instance; nay, why should only the upper half of its realm be attacked, the lung instead of the stomach?

If the lung is a point of least resistance, this difficulty is solved, and instead of my theory antagonizing Dr. Mays's it really supplies the "missing link" which was necessary to render it adequate.

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* Thomson, p. 334. Packard's *Zoology,* 1886, p. 257.

† Thomson, p. 168. Lang's *Comparative Anatomy,* 1891, p. 216.

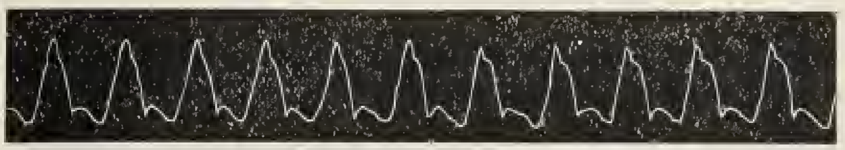
‡ Thomson, p. 130. Lang's *Comparative Anatomy,* 1891, p. 93.

A CASE OF PAROXYSMAL TACHYCARDIA
OCCURRING DURING CONVALESCENCE FROM TYPHOID FEVER, APPARENTLY CURED BY DIGITALIS.

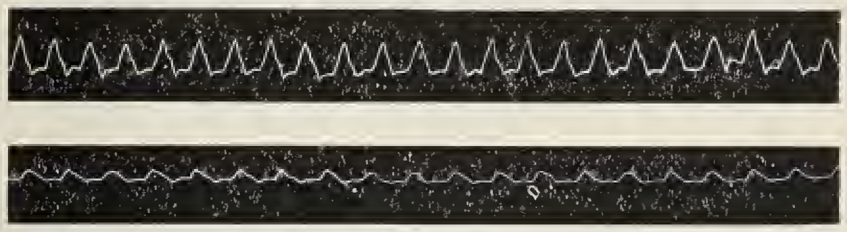
By THOMAS J. YARROW, Jr., M.D.,
PHILADELPHIA.

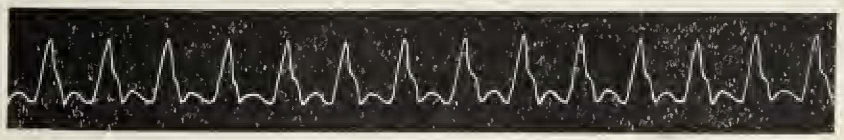
The patient, a woman aged twenty-four, married, came under my observation on the thirty-fifth day of an attack of typhoid fever, when, without any rise of temperature, she manifested a pulse of 108 (April 1, 1895).

April 1, 1895.—Pulse, 108 (tracing No. 1). The character of the pulse will be seen in above tracing. Her pulse ranged from 98 to 110 (with normal heart sounds) until April 9th, when the pulse suddenly rose to 210.

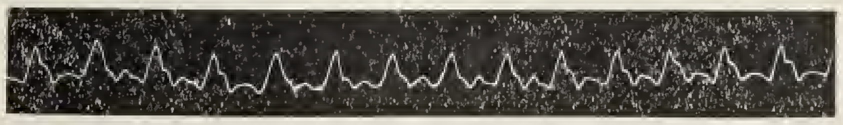


9th.—Pulse, 198 to 210 (tracing No. 2). The pulsations counted at the wrist by the finger gave from 198 to 210, the count being verified by sphygmograph. The patient at this time manifested no nervous symptoms, palpitation, tinnitus aurium, vertigo, no symptoms of Graves's disease, organic heart disease, nor any discomfort whatever, and was entirely unconscious of the rapid action of her heart. On auscultation, the first and second sounds of the heart were heard to be exactly alike in character, bearing a close resemblance to fœtal heart rhythm, or, in other words, the condition called by Huchard "embryocardie." At the time tracing 2 was taken the patient was out of bed, feeling fairly well, and, except for the rapid heart action, manifested no symptoms of importance. She was put to bed and her heart carefully watched. On April 12th her pulse fell to 138 (see tracing No. 3).



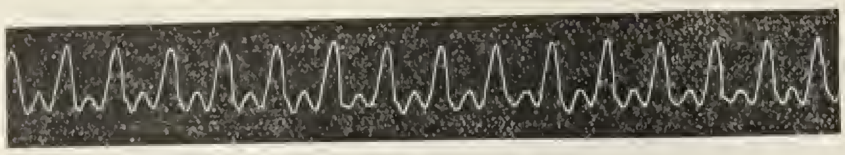


12th.—Pulse, 138 (tracing No. 3). On April 13th she was given tincture of digitalis, ten drops every three hours.

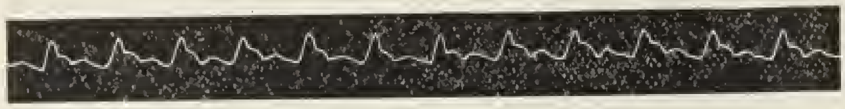


13th.—Four hours after first dose of digitalis, pulse 138 (tracing No. 4).

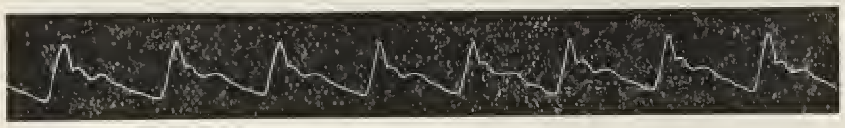
A tracing taken in the evening of the same day gave a pulse rate of 150, with hyperdicrotism well marked, with increase of sphygmo-systole (see tracing No. 5).



13th.—Evening pulse, 150 (tracing No. 5). At this time the heart sounds had somewhat lost their fœtal character, the first sound becoming slightly longer than the second. On the 15th the tension of her pulse had markedly risen, losing its hyperdicrotism.



15th.—Pulse, 114 (tracing No. 6), tidal wave becoming apparent. The pulse rate on this day dropped to 114. Both sounds of the heart approached closely to normal, though still rapid.



On the 16th the pulse resumed its normal character, dropping to 78, and the digitalis was discontinued.

16th.—Pulse, 78 (tracing No. 7). Two months later she gave no symptoms of tachycardia and felt perfectly well.

THE WEST COAST OF FLORIDA AS A HEALTH RESORT.

By L. S. OPPENHEIMER, M. D.,
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If the medical adviser could select for each case of tuberculosis, neurasthenia, or invalidism the especial climate best adapted for each, this article, which is intended to describe some of the sanitary features of a favored area of Florida, would never appear.

The word Florida to the average Northern physician is usually symbolical of perennial sunshine and flowers, pure, balmy, balsamic air—a panacea for every malady—exemption from winter's chilly blasts, a dreamy, lazy, luxurious, tropical existence. To others it signifies fierce, burning suns, depressing heat, vicious mosquitoes, malarious swamps, and alligators.

The State extends far enough to the north (31°) and toward the tropics (24½°) to give a trifle of coloring to either of these hyperbolic flights of prejudice. In the northern portion of the State we have some ice and frost every winter; in the southern these never occur; throughout the rest of the State the conditions vary according to topography, prevailing winds, and neighboring waters. Nor do the east and the west coasts present uniform features or similar conditions in the same latitudes. The northeast and northwest coasts are exposed to bleak northeast, north, and northwest blasts and cold waves that do not, as a rule, affect the southwest to any material extent.

The annual cold waves from the northwest sweep across the State in a diagonal direction. By consulting a map of Florida it will be observed that such waves as are not tempered by passing over the warm waters of the Gulf of Mexico, sweep overland to the southeast coast. The famous freeze of 1895 has left far deeper traces of ruin in Brevard County, on the east coast, than in Polk, Hillsboro, and Manatee on the west, the latter being exactly in the same latitude as the former.

In an attractively illustrated pamphlet entitled *Observations in Florida*, Dr. C. S. Middleton, of Philadelphia, says:

> "The changes of weather on the eastern coast are more numerous and severe than in the interior or on the western coast.
>
> "Even the most desirable locations on the eastern coast are more or less subject to the cold storms off the Atlantic, and, therefore, not always pleasant and safe.
>
> "Actual periods of inclemency are less on the western coast than on the east. When a northeaster sweeps in from the Atlantic Ocean, it must strike the east coast first. As the storm extends across the State it is met by the land and pine forests which stand in its course, and, finally, by resisting forces coming up from the tropical gulf."

There are many hundreds of keys and peninsular juttings around the mainland of Florida. On the west coast they offer, it is believed, much additional protection against the cyclones, tornadoes, and storms which come from the northwest, or from the West Indies occasionally. The Hillsboro coast has been remarkably immune from these, none having ever passed into the mainland at this point, according to the United States weather records at this place.

The district that we desire to bring to the notice of the reader is that portion of Hillsboro County lying west of the Hillsboro River (which flows through and intersects the city of Tampa), and southwest across Tampa Bay and the Pinellas peninsula to the Gulf. This country offers to the climate seeker the nearest approach to the ideal winter to be found anywhere in the world. That part of Tampa included in the above is the favorite residence district, and is called Hyde Park.

The city of Tampa is neither sewered nor paved, and yet its health will compare favorably with that of any city in the State. According to the vital statistics of Dr. J. W. Douglass, city health officer, the average mortality for the first seven months of 1897 was 11.8 per annum to the thousand; for the past four years it has been 13.7 to the thousand. Hyde Park rarely furnishes any portion of this mortality. The soil is for the most part coarse sand, which filters rapidly and, after the heaviest rains, leaves the surface dry in a remarkably short time. No dust, no mud.

Hyde Park enjoys a high sloping position, which insures rapid and perfect drainage toward the river on the east and Tampa Bay on the south. Its well-known healthfulness and natural advantages have long since pointed it out and caused it to be much sought as a residence location by the people of Tampa and by visitors. Many of the best residents here offer the winter sojourner homelike or elegant quarters and an excellent table. The famous resort, the Tampa Bay Hotel, is situated here on a beautiful promontory overlooking the banks of the river, and from the upper windows overlooking the placid waters of Tampa Bay on the south. This ideal colossal hostelry of fairyland, with its brilliant gardens and orange-laden groves, its theatre and natatorium, its exposition building, its horticultural houses, its concert rotunda, and varied boats, are as greatly enjoyed by visitors and sightseers as they are by the guests themselves. Here modern scientific plumbing and sewering have probably reached their highest art, and have thereby aided in creating for us a Utopia of the hygienist.

The temperature of Hillsboro County during the late fall, winter, and early spring months is all that could be desired. It has been repeatedly proved that a mean winter temperature below 60° F. is uncomfortably cold, while one above 67° or 68° F. is as disagreeably warm.

Dr. Worley and Dr. Hughlett, in an excellent article in the *Journal of the American Medical Association,* February, 1897, report the mean temperature of Jacksonville and Jupiter on the east coast as in the accompanying table, the temperature for Tampa being furnished by the United States Weather Bureau here.

	Dec.	Jan.	Feb.	Mar.	
Jacksonville	56°	55°	57°	62°	For 26 years.
Tampa	62	60	62	67	For 6 years.
Jupiter	67	65	67	68	For 6 years.

The mean winter temperature, therefore, for this district is 63°, a happy medium between the others. For Jacksonville it is 58° and for Jupiter 67°. Tampa lies about midway between Key West and Jacksonville, or about one degree north of Jupiter on the east coast. No day so cold as to require heavy wraps, nor so warm as to be oppressive. The variations of temperature are proverbially slight. No sudden shocks from sudden or great changes are ever experienced.

According to the vital statistics of the city health officer of Tampa, there are no diseases of a prevalent type during the winter. During the summer the prevailing diseases are of the enteric class. Each winter the North and the East and the West transport to our hospitable clime their armies of tuberculous unfortunates. Hence our mortality tables show about as many of these cases in winter as in summer. On the other hand, no one now attempts to deny that the Florida climate has absolutely cured thousands of tuberculous lungs in all stages of the malady; every village, town, and city, and every experienced physician bearing testimony to this statement. Albeit we have not yet arrived at that age of diagnostic acumen where we can decide what conditions or stages are most benefited by a Florida atmosphere, we do know that when cases are not benefited by this climate they are very rarely benefited by any other.

We are told by the older resident physicians that consumption did not exist in this State thirty-five or forty years ago except as a distinctly acquired disease.

Although the most desirable season in Florida is the winter, chronic pulmonary consumption appears to be benefited equally as much during the summer months. As a rule, the summer months on the west coast are delightful; we never have the oppressive heat of the Northern States, and sunstroke is entirely unknown. No matter how hot the day, the night is always cool and refreshing.

Dr. George A. Hewitt, of Philadelphia, has published a series of elaborate articles on the Pinellas Peninsula in the *Medical Bulletin,* from the May number of which the following is quoted:

> "There is a widely prevalent opinion that, however healthful and charming Florida may be as a winter resort, it is intolerable as a summer residence for people reared in the North. This belief is entirely fallacious as regards the country adjoining Tampa Bay. Tropical heat does not depend solely upon lines of latitude. Other elements must be taken into consideration. The Pinellas subpeninsula, connected to the mainland by a narrow neck, enjoys almost the equivalent of a marine atmosphere. From nearly every point of the compass the currents of air move over large bodies of salt water. Few of our Northern seaside resorts possess such a conspicuous advantage. The consequence of its situation is that its winters are exceptionally mild and its summers pleasant. During no season or month of the year are the thermometrical variations extreme. From day to day the temperature is equable. None of those sharp variations of rise and fall to which we are accustomed in the North occur in the neighborhood of St. Petersburg, Clearwater, Tarpon Springs, and Tampa. There is, in fact, a comparatively slight difference between the mean temperature of winter and summer."

I agree with Dr. Sanger Brown (The Influence of Climate in Nervous Diseases, *New York Medical Journal,* July, 1897) when he says that some of the various forms of functional nervous disorders are made worse by hot weather. But, on the other hand, he concedes that this aggravation is much more frequently seen in high altitudes than in low ones, and that the large majority of nervous invalids do well at the seaside. His observations were limited to the far western States and the eastern seaside. The neurasthenic finds on the Florida coast at all seasons a soothing, beneficent power, which is akin in many instances to a soporific influence. As is daily remarked, "this is a great country for sleep."

Nor is it clearly demonstrated that any special pulmonary diseases are benefited more by a dry atmosphere in a high altitude than by a humid sea air near the sea level, such as obtains in this State. The relative winter humidity at Jacksonville is 74°, and at Tampa 82°. From observations made in the different seasons we have long been convinced that much of the atmospheric virtues is as directly due to this essential principle of humidity as it is to the peculiar balsams, iodine, ozone, and other constituents suspended in it; and in winter this soothing, calmative, climatic influence allays nervous irritation, dissipates insomnia with its train of sequelæ, always relieves and frequently cures the asthmatic, cures catarrhal disorders of the air-passages, dispels or holds in check pulmonary consumption, and gives rest and renewed vigor to the convalescent and the debilitated.

About ten miles southwest of Tampa lies Port Tampa city, built on a flat, semimarshy soil near the shallow shores of Tampa Bay, only three to five feet above sea level, its streets intersected by numerous deep, black ditches, to allow the tides a respectful entrance into and exit from town, and to keep the streets from being overflowed by the rains. To the superficial investigator this should appear a veritable hotbed of malarious and kindred diseases. As a matter of fact, the leading surgeon of the place writes, "We have practically no malaria here whatever," and the writer vouches for the correctness of this dictum.

There exists an erroneous impression in the minds of most Northern physicians that Florida, because of her subtropical position and numerous marshes, is a perennial garden of malaria. This is so far from being the truth that, in point of fact, the obstinate and pernicious types of malarial fevers so common in the Southern and Middle States are entirely unknown in south Florida. People living near swamps do not appear to suffer any material inconvenience therefrom. The Everglades are inhabited by the Seminole Indians and by numbers of whites, all of whom enjoy as perfect immunity from malaria as do the residents of the New England States. Throughout each year many trappers, cowboys, and hunters, and pleasure-seekers from the North go into these immense swamps and remain for weeks, usually sleeping in the open air night after night, without suffering the slightest indisposition from either the heat, the drinking water, or the swamps.

In this connection the report of Surgeon-General Lawson, published many years ago, when Florida's advantages were still undeveloped, will be found as applicable to-day as it was then: "The climate of Florida is remarkably agreeable, being subject to fewer atmospheric variations and its thermometer ranging much less than in any other part of the United States, except a part of the coast of California. As respects health, the climate of Florida stands pre-eminent. That the peninsula of Florida is much more salubrious than that of any other State in the Union is clearly established by the medical statistics of the army. Indeed, the statistics in this bureau demonstrate the fact that diseases that result from malaria are of a much milder type in the peninsula of Florida than in any other State of the Union. These records show that the ratio of deaths to the cases of remitting fever has been much less than among the troops serving in any other part of the United States."

"In the middle division of the United States the proportion is one death to thirty-six cases of remitting fever; in the northern division, one death to fifty-two cases; in the southern division, one death to fifty-four cases; in the Texas division, one death to seventy-eight cases; in California, one death to a hundred and twenty-two cases; in New Mexico, one death to a hundred and forty-eight cases; while in Florida (a Gulf State) it is but one death to two hundred and eighty-seven cases" (Dr. Worley and Dr. Hughlett).

The Pinellas Peninsula is from four to fifteen miles wide and nearly thirty-five miles long; its eastern shores are washed by Tampa Bay, its western by the Gulf of Mexico. From St. Petersburg on the south to Tarpon Springs on the north the country is one grand sanitarium. These delightful towns, as well as others between them, are favorite summer and winter resorts, and are growing rapidly in popular esteem, because of the purity and healthfulness of the air, soil, and water, and the attractive surroundings.

The narrowest part of the peninsula is at Bellair, where the gulf shores are more steep and romantic than elsewhere. This is a most beautiful site for a winter sojourn. The constant and delicious breezes, whether from gulf or from bay, the sweet and pure atmosphere impregnated with balsamic exudations from the forests of evergreens, the porous, sandy soil, the picturesque bluff overlooking the gulf, forty-five feet above its level, are all too enchanting to have escaped the eye of the shrewd investor.

Last year there was erected here another of those charming hotels for which the State has become famous, the Belleview, through the enterprise and generosity of the genius of Florida, that grand old philanthropist, to whom it is the delight of the people of Florida to pay reverent and affectionate homage in recognition of his immense donations to the State, Mr. Henry B. Plant. This exquisite winter place, surrounded by hundreds of gigantic, luxuriant cocoanut palms and tropical phantasies of the horticulturist's art, must attract the pleasure and rest seeker as strongly as it does the invalid.

The entire peninsula offers almost equally splendid promises. No malaria, no dust, no mud, no fogs, no sudden changes of temperature, daily sunshine, pure sweet air and water, and exhilarating breezes day and night. Are not these the excellences so devoutly wished for by the invalid, the apparent realization of his sweetest dreams?

The writer has lived in south Florida for the past twelve years, during which time he has often been struck by the effects of climate upon disease. The observations of many able and reliable Florida practitioners, coupled with his own, have been sufficiently positive to impel him to render this information to the physician unacquainted with the distinctions between north and south Florida, and the east and west coasts, for guidance in directing his patients to a proper, genial climate.

AN UNUSUAL CASE OF DELIRIUM TREMENS

By G. A. HENDON, M. D.,
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While serving as interne in the male medical ward of the Louisville City Hospital I was sent for one day to admit a patient whom I found to be on the verge of the active stage of delirium tremens. He was a well-built, muscular fellow, apparently about twenty-seven years of age. I ordered him assigned to the room in which we took care of violent and incorrigible patients. While being conveyed to the apartment he constantly referred to his tongue and insisted that it was choking him to death. To this I gave no heed, regarding it as an hallucination. I left him in charge of the ward nurse, who had no difficulty in persuading him to lie down and be quiet, while I attended to some duties in another part of the building. I returned in about half an hour to look after my patient and found him alone, the nurse having been called in the mean time to attend to some ward duties. He was on his knees, frantically thrusting first one hand and then the other into his mouth, as if he were trying to dig out something with his finger nails. In front of him on the floor was a large pool of blood. My immediate impression was that I had to deal with a case of hæmatemesis, and I judged he was endeavoring with his hands to dislodge the blood clots from his throat. Hastily summoning the nurse and procuring some styptics, I began to make a hasty examination in order to discover the source of the hæmorrhage. While I was thus engaged the nurse picked up from the floor the patient's tongue and handed it to me. The member had actually been torn out by the roots. I succeeded in checking the hæmorrhage very promptly by the application of Monsel's solution to the bleeding stump. After securing his hands in a leather muff, to prevent further violence, and administering hypodermically a heart stimulant, I left him in charge of an orderly and went to my room in the building. In about an hour I was again startled by the appearance of the orderly, and his announcement that my patient had succeeded in freeing his hands and was, as he expressed it, "fooling with his tongue again." I hastened to the room and found the patient again on his knees. With both hands free, he was clawing frantically at the roots of his tongue, while the blood spurted in jets between his fingers. When I opened the door he sprang upon me with the fury of a maniac, his weight forcing me to the floor. I realized it was a struggle for life, for he seemed to be trying to get his fingers around my throat. I was alone, my assistant having fled precipitately at the first show of fight. Over and over on the floor we rolled. Both of us soon became bathed in blood and must have presented a horrible spectacle. Suddenly I felt his struggles grow weaker and his viselike grasp relax. In a few more minutes I had no difficulty in holding him with one hand while I adjusted the leather muffs with the other. I was in the act of buckling the last buckle when I felt a convulsive tremor through his body, and he died in my arms without a gasp or struggle.

The post-mortem revealed nothing of interest save the catarrhal condition of the gastric mucous membrane and congestion of the pia mater usually seen in alcoholic subjects.

I report this case, as I have never heard of an instance in which self-destruction was accomplished in such a shocking manner. The sudden death I attribute to the secondary hæmorrhage and prolonged exertion involved in our struggle.

1225 Highland Avenue.

A CASE OF ANGEIOMA OF THE TONSIL,

WITH RECURRENCE OF THE SAME THREE YEARS AFTER REMOVAL.*

By J. H. HARTMAN, M. D.,
BALTIMORE.

In presenting the following case to your consideration I thought it might be of sufficient interest, if for no other reason but for the fact of the comparative rarity of this form of growth in the upper respiratory tract. Angeioma varicosa, limited and confined to the tonsil, must be seldom met with; I have been able to find only two such recorded cases. One was reported at the meeting of the British Laryngological and Rhinological Association, April 13, 1894, by Mr. Wyatt Wingrave, where sections of the growth which he had removed from the surface of the left tonsil were exhibited which upon microscopic examination proved to be an angeio-fibroma. The other case was one reported by Stork at the meeting of the Wiener laryngologische Gesellschaft, April 4, 1895. In November, 1888, I saw a case of angeioma of the right tonsil in a woman twenty-eight years of age, the growth occupying the lower two thirds of the tonsil and complicated with an external tumor, the nature of which was uncertain. The patient was seen by Dr. J. Solis-Cohen, in Philadelphia, and Dr. Tiffany, in Baltimore. The case was under my observation for a lengthened period. She declined surgical interference, and finally, after being again seen by Dr. Cohen and being assured that nothing but an operation would be of benefit, passed from my care without any public record being made of the case.

In March, 1893, Mr. W. S., of Accomack County, Virginia, thirty-two years of age, was brought to me by his physician, Dr. Shaw. Upon examination I found the entire surface of the left tonsil occupied with a large mass of angeiomatous outgrowth, nodular and irregular in outline, of a dark purplish color, and of about the size of a pecan nut. The patient was unable to give any definite history as to how long this condition had existed, but had complained of some slight aching on that side of his throat for the past year.

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* Read before the American Laryngological Association at its nineteenth annual congress.

Immediate removal of the tumor was decided upon, which was performed very slowly with a wire *écraseur*, the fear of severe hæmorrhage being kept in view. The operation lasted nearly an hour, and very little bleeding took place at the time; but on the following day, some twenty-four hours after the operation, a most profuse hæmorrhage came on, which, after the use of ice, styptics, and pressure failing to control, was checked by the direct application of the galvano-cautery.

Upon microscopic examination of the growth it was found to present the usual appearance of angeioma, being made up largely of capillary blood-vessels, with either thin or thickened walls imbedded in a more or less abundant connective-tissue stroma.

The patient left my care within a week, with no vestige of the growth remaining. Nothing further was heard of the case until April, 1896, when he presented himself again. A recurrence of the growth had taken place, but only to a limited extent, occupying the lower third of the tonsil. The patient thought that this new formation had taken place within the last six months, with a perceptible increase in size in the last two months. This new growth was removed with the galvano-cautery snare, without any hæmorrhage. No microscopic examination could be made of the specimen on account of the destruction by the hot wire of the snare. The patient was seen again last June, and there was no appearance indicating a further return of the growth.

HYPERTROPHY OF THE LINGUAL TONSIL.*

By JAMES J. BOWEN, M. D.,
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WHILE hypertrophy of the lingual tonsil can not be classed as a very common condition, still its occurrence is sufficiently frequent not to render it extremely rare. When it does occur, the symptoms are such that a throat specialist is consulted in preference to the general practitioner. Consequently the latter has but little opportunity to observe very many cases. All monographs pertaining to the subject recognize the importance of the disease, and now no examination of the throat is considered complete without having brought into view the glosso-epiglottic fossæ in which the lingual tonsil lies.

Unlike the faucial tonsil, it is spread upon the surface instead of projecting from it. The central ligament of the tongue divides it into a right and left portion and forms a slight depression between them. It is composed of simple lymphatic tissue interspersed with trabeculæ. Hypertrophy of the organ is a disease of adult life, and in this particular also it differs from its faucial neighbor.

Bosworth, in the 1896 edition of his well-known treatise, states that "lymphatic changes belong essentially to child life," and the most plausible explanation of this condition comes from the same source, and is: "The morbid process in the tissue of the lingual tonsil commences in early life, while the symptoms do not manifest themselves until later years."

The ætiological factors are numerous—some definite, others obscure. It may have as its starting element a continued sympathetic hyperæmia dependent on some other nose or throat affection. It not infrequently follows diphtheria and scarlet fever, when contracted from children. People who indulge in the use of a great amount of spices and articles of diet that have irritating qualities are extremely liable to suffer from this condition. Likewise, those addicted to the immoderate use of alcohol and tobacco are prone to have it. Heredity exerts no influence in the occurrence of simple uncomplicated cases of hypertrophy of the organ, while it may when the hypertrophy is caused by a constitutional disease. Certainly the neurotic element has an important significance, as on it depends, in a great measure, the degree of severity of the symptoms.

Pathologically, the cells undergo regenerative changes peculiar to all neoplasms. They increase in number and in size. The hypertrophy increases until the organ fills up the glosso-epiglottic fossæ and raises the epiglottis from its normal position.

Uncomplicated, it is purely a local disease and has no premonitory symptoms. The first sensation complained of is a feeling as if something is stuck in the throat, and, should the attack come on after the patient has partaken of a big meal at which he has generously swabbed his mouth with a lot of irritating substances, he will invariably maintain the impression that an unswallowed portion of food is causing the trouble. Again, it sometimes starts as a feeling of fullness or stuffiness in the throat, which gradually increases until finally he is compelled to seek relief. Tickling of the throat and an irritating cough are prominent among the constant symptoms. Frequent and unsatisfactory efforts are made to clear the throat, and the continued hawking and scraping thus induced make the voice weak and the larynx tired. There is no hoarseness, however, and phonation is unimpaired. Pain is not always present and seldom severe when it is, being the pain of continued pressure that resembles fatigue more than agony. Should the tip of the epiglottis become imbedded in the mass, paroxysms of coughing and even laryngeal spasm may be produced. Should the hypertrophy take on an inflammatory attack, the larynx might be invaded, and the symptoms thus incited overshadow those of the primary ailment.

The size of the growth differs materially in different patients, not always the one with the largest growth being the one subjected to the most trouble.

Thrasher, in the *Journal of Laryngology*, reports a case where the organ was enlarged to the size of a walnut. Deglutition was exceedingly difficult and the voice was indistinct.

Casadesus mentions a case in the *Atlanta Medical*

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* Read before the Brooklyn Medical Society, September 17, 1897.

and Surgical Journal of October, 1894, where the enlargement was sufficient to cause nocturnal asthmatic attacks, which were relieved when the treatment was directed to the lingual tonsil.

A curious case is reported in the *Revue de laryngologie, d'otologie et de rhinologie*, Paris, February, 1895, by Polak. A young man, by trade a tanner, came to him complaining of severe pains in the hyoid region, difficult deglutition, and a chill, followed by a high fever. Inspection showed the lingual tonsil much swollen, very red, and covered with a muco-purulent secretion. The epiglottis was œdematous and inclined backward. The following day small white masses covered the follicles of the lingual tonsil, and to all appearances it was a typical follicular amygdalitis of that organ, a condition that not many of us have ever had the opportunity of seeing.

There is but one way to make the diagnosis definitely, and that is with the laryngeal mirror. A single glance will suffice to show a raw, angry-looking mass, irregularly nodulated, just anterior to the epiglottis, and covered in parts with a mucous secretion. A sulcus may be observed in the median line, representing the central ligament of the tongue, but occasionally it is not well marked. The epiglottis is congested and inclined backward. The veins at the base of the tongue are frequently in a varicose condition, in which case the symptoms are aggravated.

The disease may resemble in its symptoms any neoplasm or foreign body lodged in the same locality or globus hystericus; but the laryngeal mirror reveals at once the real trouble.

Lewin, in the *Laryngoscope* of July, 1896, states that the disease not infrequently associates itself with goître. Within the last year clinical advantages gave me an opportunity to treat six cases of goître, and in none of these could I discover any enlargement of the lingual tonsil whatsoever.

The methods of treatment vary much, though they all have the same object in view—namely, the destruction of the growth. Chemical caustics, the knife, wire snare, and the galvano-cautery are all successful in different hands. Nitrate of silver, iodine in glycerin, chromic acid, and other applications with caustic or astringent properties certainly benefit the condition, if you have the persistence and your patient the endurance to faithfully follow the treatment until a cure is effected. The wire snare is an efficacious remedy when the growth is of such a shape that it can be caught in the loop, and this procedure, on account of its simplicity and thoroughness, has been adopted by many as the correct method of treatment. The knife should never be used as a remedy for this condition—the base of the tongue, where there is a great number of blood-vessels, is a locality in which hæmorrhage is very easily induced, but extremely difficult to check.

The use of the galvano-cautery is the ideal method. Results that are almost instantaneous, no hæmorrhage, and a permanent and absolute destruction of the growth are qualities that should make every surgeon its advocate. With the tongue drawn well out by the patient himself, the laryngeal mirror is introduced until it brings into view the field of operation, which has been anæsthetized with a twenty-per-cent. solution of cocaine. The electrode, curved as nearly as possible to the shape of the tongue, is rapidly slid backward until it rests upon a prominent point of the mass. The circuit is then connected and a little pressure made upon the part. For a brief moment the hypertrophied tissue is burned, then the electrode is withdrawn. This done on two or three of the largest nodules will be sufficient. Cicatrices form and extensive contraction results within the following week. For a few days after the cauterization the part may be painful. A liquid diet and cool drinks generously administered is the only after-treatment requisite.

782 Hancock Street.

THE TREATMENT OF
SUPPURATING FISTULOUS TRACTS.*

By EMANUEL J. SENN, M. D.,
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This subject is one of infinite importance and of such a comprehensive nature that I will not attempt to describe the treatment of the various kinds of fistulæ, but will speak of the persistent variety following drainage or trauma, and which for no apparent cause continues to suppurate for an indefinite period of time, when there is gradual or sudden cessation of activity followed by complete, definitive healing. Such fistulous tracts are a source of great annoyance both to surgeons and to patients; especially is this so if following in the wake of some brilliant operation, as it detracts from the surgeon's glory by precluding a complete cure; and prolonged continuous treatment is a cause of great inconvenience and worry to the patient.

In the treatment of fistula the cause is the essential element to be sought for and dealt with. The scope of this brief paper does not pretend to deal with the treatment of congenital fistulæ—such as bronchial, omphalo-mesenteric urachus, etc.—which are a result of deviation from the normal embryonic development; nor of fistulæ, such as intestinal, gastric, vesico-vaginal, in all of which there is great liability to a suppurative process; nor those following osteo-myelitis, tuberculosis, stitch abscess, etc.

In the foregoing the ætiological factor is evident, and the removal of that, provided such a course is possible, brings a favorable result. I wish to call attention to another phase of fistula which is most rebellious to treatment. I speak of the fistulous tract

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* Read before the Mississippi Valley Medical Association, in Louisville, Ky., October 5, 1897.

per se, there being no focus in the bottom of the wound which might harbor microbic life, such as a sequestrum, non-absorbable stitch, unyielding suppurative cavity, etc.

The cause is situated in the walls of the fistula and is due either to pus microbes, their ptomaines, lack of intrinsic vegetative capacity of connective-tissue cells, and to the too-often-used strong chemical properties of antiseptics. That the presence of deeply seated microbes is the cause of protracted discharge is beyond doubt in the great majority of cases; but there are instances when there is every reason to believe there is perfect asepticity, drainage only having been resorted to for the removal of sanious discharges, but the drainage tract refuses to heal kindly after removal of the drain. It is well known how the tissues of different individuals, under the same conditions, vary as regards the process of repair. We must not regard every discharging fistula when aseptic precautions have been taken as necessarily of a pyogenic character. The exudation in such cases is not pus, but lymph; as all postnatal embryonal cells physiologically secrete a fluid macroscopically easily mistaken for pus. Let us consider the pathology of the walls of a chronic fistulous tract. The habitat of pyogenic microbes is not on the surface of the wall of a fistula but in the deeper connective tissues. After cell infiltration has taken place the vascular supply becomes diminished and nutrition is impaired with a consequent suppuration. It is by reason of the deeply seated microbes that fistulæ become so intractable. The sides of the fistula are lined with bluish-gray granulations, interspersed with areas of suppurative necrotic tissue. This region is anæmic, and the embryonal cells fall victims of the microbes and become pus corpuscles. Underneath the first layer or two of granulations the cells are more vascular, but they still furnish a favorable soil for bacterial life. If not surgically interfered with the fungous granulations are thrown off gradually or the phagocytic action of the blood arrests further progress. This is a slow process and it may be complicated by deeper burrowing of pus, forming an abscess. The surgical treatment of such a suppurating tract should, wherever practicable, consist in transforming it into an open wound by incision, followed by thorough curettage and secondary disinfection. Where this is not possible, less radical means must be resorted to. The active cause must be reached. If the fistula is direct, this is an easy matter, but if it is tortuous, the microbic stronghold is difficult of attack. The conservative treatment resolves itself into the mechanical and chemical. By the former is meant the removal of microbes, pus, and *débris* lining a fistulous tract by thorough curettage, followed by aseptic dressings. The chemical or antiseptic irrigation treatment is not rational unless combined with the mechanical, and even then, probably, such solutions are of little avail. No less an authority than Schimmelbusch stated that it was utterly impossible to disinfect a wound after infection. It is folly to use weapons which do not pierce the vital point. Even if antiseptic solutions could be used in their full strength, they would be unable to permeate the tissues and reach the cause. Again, it is a question whether antiseptics are destroyers of pus microbes in tissues, as wound products almost invariably contain albumin, which forms chemical compounds with antiseptic solutions, and the antizymotic power is mitigated or entirely lost. Antiseptic solutions have a deleterious effect on fixed tissue cells, diminishing their resistance; or, if sufficiently potent, cause their entire destruction. It is well known that certain chemical substances, such as turpentine and croton oil, have pyogenic properties, producing the so-called chemical pus. May not chemicals in solution, such as our toxic antiseptics, produce products which have the appearance of pus, but are still not clinical pus? Antiseptics which are of sufficient potency to destroy microbic life have the identical effect on surrounding granulation tissue. Strong antiseptic irrigation continued at intervals is directly antagonistic to the healing process. It is cell destruction instead of cell repair. I have seen case after case where irritating solutions, such as bromine, iodine, bichloride of mercury, etc., had been flushed through fistulæ day by day without benefit until mechanical removal of abundant fungous granulations lining the tract by curettage had been resorted to, followed by dry dressing. After such a course, there was immediate subsidence of symptoms, followed by definite healing.

The rational treatment should not be based upon the attempt of direct destruction of microbes, which is well-nigh impossible, but to render a fertile soil, which was favorable for their reproduction, barren. This is best accomplished by thorough curettage, which must be done from the external opening to the bottom of the wound. When the fistula is tortuous, a uterine curette, the handle of which can be adapted to the curves of the walls, answers the purpose well.

This operation must be done with considerable force, irrespective of hæmorrhage, until considerable resistance is encountered, which shows that fixed cells have been met with. This insures the removal of some of the microbes themselves, which are, as a rule, deeply seated, although this is of secondary importance. But chief of all is the removal of unhealthy granulations and *débris*, the most fruitful soil of microbic cultivation. This operation is followed by non-toxic irrigation, such as solutions of boric acid, salicylic acid, Thiersch's solution, normal salt solution, acetate of aluminum, or sterilized water, for the mechanical removal of detached *débris* and toxines.

Having removed as much of the culture medium as possible, the next procedure should have for its aim inhibition of remaining bacteria. This is best accomplished with dry dressing, provided the necrotic tissue has been removed entirely, otherwise dry dressing is in error, as it would only form protection to incubation of microbic life underneath.

Non-toxic antiseptic powders, such as boric acid, salicylic acid, or, what is still better, a combination of one part of iodoform and five parts of boric acid, should be thrown into the fistula. The combination of iodoform and boric acid is practically non-toxic. Iodoform, while probably not a direct antiseptic, forms certain combinations with microbes or their toxines, rendering them inert.

As these chronic fistulæ do not, as a rule, suppurate freely, tubular drainage is not called for. This form of drainage is not to be recommended except when the discharge is copious, as it does not aspirate pus, but drains only by reason of gravity. Such action can only take place if the patient is in a favorable position. Iodoform gauze should be packed loosely to the bottom of the wound, as it keeps the walls of the sinus dry by reason of capillary action, and is also the source of active tissue stimulation.

After following the treatment outlined there may be a slight rise of temperature due to rapid absorption of toxines, but this rapidly subsides. The primary dressing should not be disturbed for four or five days, when it is removed, and if there is a discharge and the granulations appear flabby, the treatment is repeated. Nitrate of silver or other caustics should not be used, as the granulations are only superficially destroyed, leaving a necrotic area, which ought to be the surgeon's object of obviating. If the granulations are persistently sluggish, it is well to occasionally pack the wound with gauze saturated with balsam of Peru, as this agent stimulates the regenerative capacity of embryonal cells without impairing the vitality of surrounding tissues. In my hands most obstinate fistulæ have yielded under the treatment suggested, where previous antiseptic irrigation over extended periods of time proved of no avail.

Therapeutical Notes.

Menthoxol, Camphoroxol, and Naphthoxol in the Treatment of Wounds.—These substances are described by Wagner, of Berlin (*Deutsche medicinische Wochenschrift,* 1897, No. 44; *Therapeutische Wochenschrift,* November 28, 1897), as mixtures of one per cent. of camphor or menthol or two per cent. of naphthol and a three-per-cent. solution of hydrogen peroxide. In the camphor preparation thirty-two per cent. of alcohol is added, and in each of the others thirty-eight per cent. Any one of these three solutions, undiluted, will kill anthrax spores within three hours, although their individual constituents do not possess this property. They are all easy of preservation. In ten-per-cent. solution, they have been used in two hundred surgical cases, applied on sterilized gauze. The contact of menthoxol with the secretion of a wound gave rise to a development of gas that caused free effervescence. Cases of phlegmon, perityphlitis, and abscess were treated. After incision and disinfection, the dressing was generally allowed to remain in place for two days. The wounds rapidly ceased to be foul and suppuration grew less. Camphoroxol was found to be particularly serviceable in mastitis; in other affections no essential difference was observed in the action of the three solutions. They are all deodorizers and have an agreeable odor themselves. They have not been observed to act as irritants.

Ichthyol Suppositories in the Treatment of Prostatitis.—The *Centralblatt für die gesammte Therapie* for October attributes the following formula to the *Centralblatt für klinische Medicin:*

℞ Ichthyol	from 5 to 12 grains;
Cacao butter	" 30 " 40 "
Extract of belladonna	¼ of a grain.

M. S.: Two or three such suppositories to be used daily.

Rhus Radicans in the Treatment of Nocturnal Incontinence of Urine in Children.—The *Indépendance médicale* for November 17th describes Saint-Philippe's treatment as follows: One part of the dried leaves of the plant is macerated for two weeks in five parts of alcohol (60°). Children under six years old may take five drops of this tincture night and morning; as much as forty drops may be given to older children. If no improvement occurs in three weeks, it is useless to go on with the use of the drug. If the malady is overcome, the employment of it should be repeated from time to time.

An Antineuralgic Liniment.—The *Revue médicale* for December 1st ascribes the following formula to Eulenburg:

℞ Ichthyol, Mercurial ointment,	each	5 parts;
Chloroform, Camphorated spirit,	each	30 "

M. To be shaken before being used.

Ferratin in the Treatment of Anæmia and Chlorosis.—In the December number of the *Archives of Pœdiatrics* we find the following formula recommended:

℞ Ferratin	225 grains;
Sodium bicarbonate	135 "
White sugar	225 "

M. Divide into thirty powders. S.: A powder three times a day, in a glass of sweetened water. This is for persons fifteen years old or older. The dose for a child between five and fifteen years old is half a powder, and that for children under five years old is a quarter of a powder.

Compound Tincture of Benzoin in the Treatment of Typhoid Fever.—James C. Potter, M. B., C. M., of Spennymoor, writes in the *British Medical Journal* for November 27th of his success with this drug in several cases of typhoid fever with excessive diarrhœa. He gives five minims, in water, every two hours at first, and, if the diarrhœa does not decrease in twelve hours, he doubles the dose. He has observed benefit in all cases by the end of twenty-four hours—the diarrhœa decreases, he says, the stools are not so offensive, the temperature is decidedly lowered, and the patient feels very much more comfortable. He thinks the drug acts as an antiseptic, as a protective to the intestinal mucous membrane, and as an antipyretic.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M. D.

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THE NATIONAL GOVERNMENT AND THE PUBLIC HEALTH.

The group of articles on the subject of the public health which appeared in the December number of the *North American Review* is deserving of careful study by every citizen. The authors of the articles are Dr. John H. Girdner, of New York; Dr. Alvah H. Doty, the health officer of the port of New York, and Dr. Charles M. Drake, surgeon of the Southern Railway Company. These three gentlemen are eminently entitled to discuss the matter from their various points of view. Dr. Girdner was prominent several years ago in the advocacy of the New York Academy of Medicine's bill for the establishment of a bureau of public health. Dr. Doty is well known as a quarantine officer of unexcelled efficiency, and Dr. Drake is entitled to be heard as chief medical adviser of a large transportation company which has been seriously affected in its business during the late epidemic of yellow fever in the South, and will be equally affected whenever such conditions recur.

If at this late day there is any intelligent citizen of the United States who doubts the desirability of national cooperation, if not control, in the administration of health laws, or the desirability of having those laws uniform, we recommend to him particularly to read Dr. Girdner's article. The only real matter of disagreement is as to whether it is better to set up a national board of health, or create a bureau of public health with a cabinet officer at its head, or give increased powers to the Marine-Hospital Service by some such legislation as would be accomplished by the enactment of Senator Caffery's bill, the text of which we print elsewhere in this issue.

The proposed establishment of a department of public health involving the installation of a deliberative assembly of forty-five members is an untried scheme and one that does not entirely commend itself. It seems to us to be a radical innovation in the development of our governmental system. The growth of the several executive departments of our government has been by a process of slow increment. It is not necessary to recall the process of evolution in the latest addition to the cabinet departments, the department of agriculture. This began in a small way and in the course of time a commissioner was set over it. This continued for many years, and then, after the success of the experiment was assured and opportunity had been given to ascertain the needs of the proposed independent department, its head was raised to the dignity of a cabinet officer. Until 1798 the affairs of the naval department were under the control of the secretary of war. The interior department was established as late as in 1849.

We do not believe that a department of public health should be created suddenly if at all. It must and should grow by a process of development according to the needs of the nation in respect to such matters, so that its growth shall be healthy and the aspirations of the medical profession shall not be hindered by backward steps, which must necessarily be taken if the attempt to graft an undigested departmental machinery on our system of government should succeed.

This matter also deserves consideration from an economical standpoint. The question of expense will largely influence the legislators in their consideration of a scheme which involves the creation of a large and thoroughly equipped department, with the executive board of forty-five men whose traveling and other expenses of an indefinite character are to be paid out of the appropriations for the department. Congress has always made use of existing bureaus and officials as the nucleus for developing departments, and it seems to us that in the absence of any reasonable opinions to the contrary, it will undoubtedly do so in the present case, should any action at all be taken in the matter. Indeed, notwithstanding the unjust criticisms of the Marine-Hospital Service, the bill advocated by certain individuals recognizes the need of using the Marine-Hospital Service as a nucleus for the proposed department. It would be folly to ignore it with its existing establishment of trained officers, its hospitals, its quarantine plant, and the experience gained by its surgeons, twenty-five per cent. of whom have been tried in every yellow-fever epidemic during the past twenty years.

The recent agitation in favor of the proposed health commission consisting of one member from each State board of health and territorial health organization has doubtless been occasioned by the outbreak of yellow fever in the Southwest. From the maritime quarantine standpoint yellow fever is the only disease which need engage our serious attention. The probability of cholera or small-pox ever attaining epidemic proportions throughout our country is very small, and therefore it is chiefly to the subject of yellow fever that the supporters of the proposed measure point. As yellow fever is an exotic and practically every epidemic is the result of importation from Central or South America or the West Indies, the matter of maritime quarantine against it is one of the greatest practical importance. The persons whose opinions on this subject are worth anything practically are those who have been engaged in this work in the past on the seaboard south of Chesapeake Bay. It is no reflection on the gentlemen who are proposed as representatives of this department from the interior States to say that their practical experience in these matters is no better than that of sixty-nine million other people. It has never been their business and never will be their business while they remain in the inland States mentioned. Their qualifications for preparing rules and regulations governing these matters are neither better nor worse than those of thirty other persons selected from thirty different States not on the seaboard. We mean no unkind criticism when we say that their connection with the proposed commission in respect to these matters would be far from useful.

The American Public Health Association bill seems to us a retrograde measure. It would involve a departure from all existing methods of departmental work. It would create, to stand between the executive of the department and the management of an epidemic, a deliberative body of forty-five men whose opinions would have to be had before action could be taken. It seems a waste of time to discuss the details of a measure which has such a feature for its foundation.

Dr. Doty states that, after New York, New Orleans, and Boston, the three largest ports of the United States, which are under State control, the Marine-Hospital Service has charge of a few smaller quarantine stations, and at first sight this statement seems calculated to demolish the idea that the Marine-Hospital Service has anything whatever to do with the health interests of the country. It is undoubtedly a fact that a large number of vessels enter the port of New York; the same is true of Boston. Unquestionably these two cities have the largest ocean commerce of any cities of the United States, but after that has been said it may be added that the vessels arriving at these two ports have nothing in them seriously involving the health interests of the country, as a rule. The few small quarantines which are operated by the Marine-Hospital Service are mostly situated in the Southern cities, situations of danger, from a quarantine standpoint, and it is pretty safe to say, notwithstanding the amount of work which the health officers of the ports of Boston and New York have to do, that the work done by the Marine-Hospital Service at these Southern quarantines is ten times as important and valuable. Among the few ports whose quarantines are controlled by the Marine-Hospital Service, moreover, the ports of Philadelphia and San Francisco should be mentioned.

The views of those who really deal with the only epidemic scourge to which this country is subject are entitled to practical consideration. Dr. Drake, an officer of the Southern Railway Company, whose business interests were largely affected by the recent epidemic, who is, we may suppose, entirely free from prejudice in the matter, expresses satisfaction with the work of the service during the late epidemic, and urges that increased powers be given to it to enable it to cope more successfully in the future with similar epidemics. It is unfair to criticise the work of a person or a number of persons who are operating at a disadvantage by reason of insufficient tools or inefficient laws. The national control of epidemics through the Marine-Hospital Service has been largely hampered in the past by the objections of State-rights theorists. This has been largely overcome by practical experience. The Marine-Hospital Service has had to wait until the inefficiency of certain local measures was established, and only then would it step in and exert its powers. Thus the early and favorable time was lost when work should have been done to restrain the onward progress of a threatened epidemic. It is the fault of the law and not of the service that certain concessions have not been made to the satisfaction of persons who are interested, or profess to be interested for one reason or another, in the development of an improved health service. Senator Caffery's bill, which would confer great powers upon the secretary of the treasury, seems to us a far more promising measure than any scheme for a national board of health.

MINOR PARAGRAPHS.

THE AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS AND ITS JOURNAL.

The monthly journal entitled *Our Animal Friends* is published by the American Society for the Prevention of Cruelty to Animals. Most of the numbers that we have examined have struck us as entertaining and as moderate and reasonable in the matter of the society's objects. The November number, however, contains a long editorial article scoffing at the Pasteur treatment of rabies and the antitoxine treatment of diphtheria. The article consists very largely of quotations from the writings of certain medical men who are or have been conspicuous by reason of the pertinacity with which they hold to some views that are at variance with what the medical profession at large accepts as established beyond peradventure. The whole article leads up, of course, to denunciation of the "innumerable experiments on living animals of the cruelest and most horrible description" on which the Pasteur treatment is said to be founded, and of the "untold and incalculable suffering to living creatures" resulting from such experiments. We do not think the article is calculated to promote the society's good work or to commend it to the public, for it borders on fanaticism.

SPORADIC INFLUENZA.

In the period between December 5, 1896, and the end of February, 1897, Lindenthal (*Wiener klinische Wochenschrift,* 1897, No. 15; *Centralblatt für innere Medicin,* December 4, 1897) met with eight fatal cases of influenzal pneumonia among a large number of cases of pneumonia. In some of them he found the specific bacillus in the sputum. In seven of them the accessory nasal cavities were explored, and in six the influenza bacillus was detected, partly alone and partly together with the *Diplococcus pneumoniæ,* the *Staphylococcus albus,* the streptococcus, and Friedländer's pneumobacillus.

THE ACTION OF IRON ON THE SECRETION OF GASTRIC JUICE.

Buzdigan (*Wiener medicinische Wochenschrift,* August 5, 1897; *Presse médicale,* November 27, 1897) publishes the results of numerous chemical and microscopical examinations of the gastric contents of sixteen patients with anæmia or chlorosis who were taking iron. In three of them the gastric secretion was normal, and the iron had no effect on it. In seven there was a deficiency of both motor and secretory action on the part of the stomach; in five of these seven the iron exerted no influence on the secretion of free hydrochloric acid, but in the two others, who, like the five, had complete lack of the acid, it was caused to appear. In six who had an excess of gastric juice the iron made its acidity still greater.

THE SUGAR-FORMING POWER OF THE SALIVA IN EPILEPTICS.

At a meeting of the Paris Society of Biology held on November 27th (*Gazette hebdomadaire de médecine et de chirurgie,* December 2d) M. Bourquelot presented a note from M. Gérard concerning a case of sialorrhœa in an epileptic. The quantity of saliva secreted by the patient in the course of twenty-four hours sometimes amounted to a pint. It differed from normal saliva in possessing greater sugar-forming power and possessing a larger proportion of saline matter.

VICARIOUS MENSTRUATION BY THE BLADDER.

In the Section in Gynæcology of the Twelfth International Medical Congress (*Therapeutische Wochenschrift,* November 28th) Dr. Marsi, of Bologna, mentioned the case of a young woman who, in August, 1896, had undergone the radical vaginal operation for bilateral disease of the uterine annexa—including hysterectomy, it is to be presumed. For the four months preceding the report there had been a flow of blood from the bladder once a month. At other times the urine contained no blood. She did not complain of any pain.

ACUTE STREPTOCOCCIC INFLAMMATION OF THE TONGUE.

Sabrazès and Bousquet (*Presse médicale,* June 30, 1897; *Centralblatt für innere Medicin,* November 27, 1897) report a case of acute glossitis occurring in the course of a puerperal infection. The tongue swelled, particularly in its anterior portion, to three times its normal size. In three days the patient died with dyspnœa and collapse. Streptococcic pleurisy, bronchopneumonia, and endocarditis were found. The tongue was highly swollen in front of the papillæ circumvallatæ, its muscular fibres were fatty, and leucocytes and streptococci were found scattered through it. At the sides of the tongue there were little losses of epithelium, and there the streptococci were the thickest. The infection had taken place by the mouth.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 21, 1897:

DISEASES.	Week ending Dec. 14.		Week ending Dec. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	42	8	28	9
Scarlet fever	190	11	186	7
Cerebro-spinal meningitis	0	0	0	0
Measles	302	12	325	11
Diphtheria	148	28	195	19
Croup	6	5	3	2
Tuberculosis	204	94	178	90

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, and cholera were received in the office of the supervising surgeon general during the week ending December 18, 1897:

Yellow Fever—United States.

Flomaton, Ala.	Dec. 1–13	2 cases,	1 death.
New Orleans, La.	Dec. 5–11	5 "	3 deaths.

Yellow Fever—Foreign.

Para, Brazil	Nov 20–27		14 deaths.
Havana, Cuba	Dec. 3–9		6 "
Matanzas, Cuba	Dec. 2–8		1 death.
Regla, Cuba	Dec. 3–9		3 deaths.

Cholera.

Madras, India	Oct. 30–Nov. 5		2 deaths.

Small-pox—United States.

Birmingham, Ala	Dec. 5–11	17 cases,	2 deaths.

Small-pox—Foreign.

Havana, Cuba	Dec. 3–9		6 deaths.
Southampton, England	Nov. 14–20	2 cases.	
Odessa, Russia	Nov. 21–27	7 "	3 "
Glasgow, Scotland	Nov. 21–27	1 case.	

McGill University, Montreal.—An additional chair of chemistry has been founded and endowed in this university by Mr. W. C. McDonald, who recently erected a new chemical building at a cost of $240,000. The same donor has provided an additional endowment of $50,000 for the faculty of law, to the deanship of which faculty, with the chair of Roman law, Mr. F. P. Walton, of the Scotch Bar, was recently appointed. Mr. McDonald has, moreover, supplemented the existing endowments associated with his name by a further gift of $200,000 to provide for any deficiency in income that may result from the fall in the rate of interest in investments.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Pathology, on Tuesday evening, the 21st inst., the following papers were to be read: A Report of Two Cases of Scurvy, by Dr. A. L. Benedict; The Bacillus Icteroides (Yellow Fever); a History of its Discovery, with a Report of Personal Observations as to Biological and other Characters, by Dr. Frank Thornbury and Dr. A. Herst Appel.

The New York Academy of Medicine.—At the last meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 22d inst., Dr. Robert C. Myles was to read a paper entitled The Basal and Basilateral Diseases of the Faucial Tonsils, with Improved Instruments for the Treatment of the Same; and Dr. Joseph W. Gleitsmann was to give a demonstration of Kirstein's latest improved instruments for simplifying autoscopy. Cases were to be presented and specimens and new instruments were to be exhibited.

A Correction.—We are informed that in our recent announcement of the marriage of Dr. William H. Morrison we were in error in giving the date as Monday, November 8th. The real date was Wednesday, November 3d.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 12 to December 18, 1897:*

BRECHEMIN, LOUIS, Major and Surgeon, is granted leave of absence for one month, to take effect about December 15th, with permission to apply to the adjutant general of the army for an extension of two months.

GODFREY, GUY C. M., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Sheridan, Illinois, and will report in person to the commanding officer of the detachment of troops at Finn's Point, New Jersey, for duty at that place and at Fort Delaware.

WARE, ISAAC P., Captain and Assistant Surgeon. The ordinary leave of absence granted him is extended one month on account of sickness.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Seven Days ending December 16, 1897.*

PECKHAM, C. T., Passed Assistant Surgeon. Upon completion of duty at Vineyard Haven, Mass., to proceed to Pittsburgh, Pa., and assume command of service. December 14, 1897.

WHITE, J. H., Passed Assistant Surgeon. To rejoin station at New York, reporting at Bureau *en route* not later than December 22, 1897. December 13, 1897.

VAUGHAN, G. T., Passed Assistant Surgeon. Granted leave of absence for ten days from December 22, 1897. December 15, 1897.

YOUNG, G. B., Passed Assistant Surgeon. Granted fourteen days' extension of leave of absence on account of sickness. December 15, 1897.

OAKLEY, J. H., Passed Assistant Surgeon. To proceed to New Orleans, La., and report to Passed Assistant Surgeon J. H. WHITE for temporary duty. December 13, 1897.

NORMAN, SEATON, Assistant Surgeon. To report to Passed Assistant Surgeon J. H. WHITE at New Orleans, La., for temporary duty. December 13, 1897.

LAVINDER, C. H., Assistant Surgeon. To proceed to Delaware Breakwater Quarantine and report to the commanding officer for temporary duty. December 15, 1897.

Society Meetings for the Coming Week:

MONDAY, *December 27th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *December 28th:* Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Boston Society of Medical Sciences (private); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *December 29th:* Auburn, N. Y., City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield); Springfield, Massachusetts, Medical Club (private).

SATURDAY, *January 1st:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

BEERS—WHITTEMORE.—In New York, on Monday, December 20th, Dr. George W. Beers and Miss Maude Whittemore.

FULLER—TILLMAN.—In Clark's Hill, South Carolina, on Thursday, December 16th, Dr. A. Richardson Fuller and Miss Fannie Simpson Tillman.

GAILLARD—CAIN.—In Berkely, South Carolina, on Thursday, December 9th, Mr. Henry S. Gaillard and Miss Henrietta Gourdin Cain, daughter of Dr. Joseph P. Cain.

GRAY—CHRYSTIE.—In New York, on Wednesday, December 15th, Mr. William Gray and Miss Frances N. Chrystie, daughter of Dr. Thomas N. Ludlow Chrystie.

LE NOIR—WAYNE.—In New Orleans, on Wednesday, December 15th, Dr. James L. Le Noir, of Columbus, Mississippi, and Miss Carrie Gordon Wayne.

NORCROSS—FEENEY.—In Stapleton, N. Y., on Wednesday, December 15th, Mr. Charles Parke Norcross and Miss Mildred Feeney, daughter of Dr. John L. Feeney.

Died.

CARPENTER.—In North Greece, N. Y., on Friday, December 17th, Dr. Abdiel M. Carpenter, in the sixty-fifth year of his age.

CUNNINGHAM.—In Kingston, Canada, on Thursday, December 16th, Dr. David Cunningham, in the thirtieth year of his age.

EDWARDS.—In Atlantic City, N. J., on Monday, December 6th, Dr. Joseph F. Edwards, in the forty-fifth year of his age.

GIBBS.—In Dallas, Texas, on Friday, December 17th, Dr. J. H. Gibbs, in the seventieth year of his age.

LEWI.—In Albany, on Sunday, December 19th, Dr. Joseph Lewi, father of Dr. Maurice J. Lewi, of New York, aged seventy-seven years.

LINDSLEY.—In Nashville, Tennessee, on Tuesday, December 7th, Dr. John Berrien Lindsley, aged seventy-five years.

MURPHY.—In Milwaukee, on Monday, December 13th, Mrs. Anne Murphy, mother of Dr. John B. Murphy, of Chicago.

Book Notices.

The Origin of Disease, especially of Disease resulting from Intrinsic as opposed to Extrinsic Causes. With Chapters on Diagnosis, Prognosis, and Treatment. By ARTHUR V. MEIGS, M. D., Physician to the Pennsylvania Hospital. With One Hundred and Thirty-seven Original Illustrations. Philadelphia: J. B. Lippincott Company, 1897. Pp. xiv–229.

AN investigation that is based on twenty-five years' work in a hospital, and that is the outcome not only of clinical observation, but also of microscopical study of the tissues of the principal organs removed at each necropsy, is entitled to respectful consideration, even though the conclusions may not always coincide with those that are entertained generally. The author has been impressed by the necessity of a more intimate association of clinical medicine with pathology, and in this volume he has endeavored to bring these departments of medicine nearer together. In this effort the conclusions that he deduces from observed facts are often at variance from those of other investigators and from the conclusions generally accepted by the profession. It would be unfair to say that the general opinion is right and Dr. Meigs is in error, because it must be recalled that there is nothing in medicine in which a final analysis has been reached, and, as is the case in other professions, physicians are likely to accept as proved a logic that is invulnerable save and except in the possibility of error in the fundamental premise. The burden of proof of the fallibility of an assertion does not fall upon those who question, but upon those who maintain.

Oliver Wendell Holmes cleverly said something to the effect that it was better to be fifty years young than fifty years old, and Dr. Meigs's thesis is based on the same principle. He maintains that, as far apart and as little related as are youth and age, yet disease accomplishes the strange paradox of the commingling of youth and age, because disease can so far change an individual young in years as to produce all the conditions which, under natural circumstances, are found only in old age. Fibrosis, which has been suggested as essentially the disease of age, is quite common in middle life and even in youth; and in these latter epochs it presents, so far as the pathological conditions are concerned, exactly the same appearances as are found in persons old in years. Therefore the author designates fibrosis as the *disease of age.*

He holds that the cause of the origin of disease is either extrinsic or intrinsic, and he thinks that the world of medicine tends too far toward the theory that the origin of most diseases is extrinsic. He cites cancer and sarcoma as types of a class of disease, refers to the general inference that these diseases have an extrinsic cause that will be discovered, and then, by presenting points of parallelism between them and fibroid degeneration, deduces that there is absolutely no existing evidence to support the widely prevalent belief that the metastasis of cancer and sarcoma is due to an infection process. Again, he refers to consumption and holds that, as that disease does result from inflammation, and "it has not been scientifically demonstrated that the *Bacillus tuberculosis* ever is its cause in human beings, but only that the bacillus is present in the altered tissues of persons suffering with the disease, it is much more logical to believe that consumption is only the result of ill-ordered growth and disintegration of the natural component parts of the organism." In this he agrees with H. G. Sutton that it was the search "for finer morbid changes that brought forth the bacillus investigation and revealed those feeders on the dead." This matter need not be discussed here, for it is conceded that the author has a right to his opinion, but everybody will agree with him that, in order to obtain a comprehensive grasp of the origin of disease, it is necessary to consider the general bodily condition, and it is a matter of importance "to remember that disease does not usually confine itself to a restricted territory, and that most chronic and inflammatory diseases are related, shading into one another in a way that is wonderful."

Dr. Meigs's study of the blood-vessels results in the conclusions that there are no specific histological lesions that belong to any particular disease, and that the state of the blood-vessels and the changes in the different organs must be considered collectively if any stable conclusion is to be reached.

The author's study of the heart results in the conclusions that vacuolation of the muscular fibres is an exceedingly common lesion, though it is not now possible to predict from any clinical manifestation in what persons this condition exists; and that "compensatory hypertrophy of the heart," as it is ordinarily described and understood, has no existence; "both the gross and microscopical appearances of hypertrophied hearts show," he says, "that the muscular tissue is always diseased."

The description of the histology of the lungs concludes with the opinion that all forms of tuberculosis are morphologically only the growth of fibro-cellular tissue and its destruction.

The study of the liver results in the opinion that morbid fibrosis constitutes an essential part of all chronic disease of that organ. And the author finds that, of all diseases of the kidney, there is none so common and therefore none so important as fibrosis, though it often exists extensively "and yet fair or even good health is maintained."

To summarize this work in the author's own language: "One chapter has been devoted to the citation of the facts showing that there is such a thing as the disease of age; again, it has been argued that, owing to the operation of various causes, some of which were named, there arises a state of disease which was likened to age in youth. It has been pointed out that both the last-mentioned states are recognized by the diagnostician as Bright's disease. Pathology gives the information that the lesion invariably present in all is fibrosis. It seems, therefore, only reasonable to call the disease fibrosis, with the reservation that it is certain that final knowledge has not yet been even approached, for there must be some great underlying cause which still remains hidden."

Attention is directed to the fact that pathology has outrun diagnosis, because it shows that diseases that have been considered distinct are related. The author believes that it is in the heart and lungs that we must seek for the key to correct prognosis in chronic disease, and that heretofore the prognosis of such disorders has been of too gloomy a character.

The volume is illustrated by original etchings that materially aid the opinions expressed in the context, and it is insufficient commendation to say that the work will prove interesting and suggestive to all interested in the important topics of the causation and lesions of disease.

A Treatise on Gynæcology; Medical and Surgical. By S. POZZI, M. D., Professeur agrégé à la Faculté de médecine de Paris, etc. Second American Edition. Translated from the Third French Edition under the Supervision of BROOKS H. WELLS, M. D., Adjunct Professor of Gynæcology at the New York Polyclinic, etc. With Six Hundred Illustrations. New York: William Wood and Company, 1897. Pp. xiv–936. [Price, $5.50.]

THE editor of this, the second American, edition states that it is a translation of the third French edition, which has been carefully and thoroughly revised.

This revision has been of signal advantage, because by the use of a slightly smaller type and thinner paper, and the omission of the lithographic plates and the pages of bibliographical reference, and a judicious pruning of woodcuts and of text, the work has been condensed into a single volume, a matter of material advantage to the reader.

The more recent advances in aseptic and antiseptic methods are described, there is a section on endoscopy, and there is satisfactory reference to the more recent treatment of uterine fibroids by abdominal and vaginal hysterectomy, as well as to the indications for the latter operation in pelvic suppurations.

The tables of myomectomies and supravaginal amputations of the gravid uterus include some operations reported in 1894, though it seems that such records should include the cases reported up to the time of the printing of the book.

In its present shape the work is likely to have a greater popularity than before.

The Physician's Visiting List (Lindsay & Blakiston's) for 1898. Forty-seventh Year of its Publication. Philadelphia: P. Blakiston, Son, & Co. (Successors to Lindsay & Blakiston).

We need do hardly more than mention the new issue of this well-known and time-honored pocket-book. Its contents are, as usual, accurate and well arranged, and the blank pages for entries and memoranda are of attractive appearance.

BOOKS, ETC., RECEIVED.

Manual of Gynæcology. By Henry T. Byford, M. D., Professor of Gynæcology and Clinical Gynæcology in the College of Physicians and Surgeons of Chicago, etc. Second Edition. Containing Three Hundred and Forty-one Illustrations, many of which are Original. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xxiii–13 to 596. [Price, $3.]

Skin Diseases of Children. By George Henry Fox, A. M., M. D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York, etc. With Twelve Photogravure and Chromographic Plates, and Sixty Illustrations in the Text. New York: William Wood & Company, 1897. Pp. viii–166.

Manual of Pathology, including Bacteriology, the Technics of Post-mortems, and Methods of Pathologic Research. By W. M. Late Coplin, M. D., Professor of Pathology and Bacteriology, Jefferson Medical College, etc. Being a Second Edition of the Author's *Lectures on Pathology*, rewritten and enlarged. With Two Hundred and Sixty-eight Illustrations, many of which are Original. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xxi–11 to 638. [Price, $3.]

Clinical Methods. A Guide to the Practical Study of Medicine. By Robert Hutchison, M. D., M. R. C. P., Demonstrator in Physiology, London Hospital Medical College, and Harry Rainy, M. A., F. R. C. P. Ed., F. R. S. E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. With One Hundred and Thirty-seven Illustrations and Eight Colored Plates. Philadelphia: Lea Brothers & Co., 1897. Pp. xii–552. [Price, $3.]

An Epitome of the History of Medicine. By Roswell Park, A. M., M. D., Professor of Surgery in the Medical Department of the University of Buffalo, etc. Based upon a Course of Lectures delivered in the University of Buffalo. Illustrated with Portraits and other Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1897. Pp. xiv–348. [Price, $2.]

Ambroise Paré and His Times. 1510–1590. By Stephen Paget. Illustrated. New York and London: G. P. Putnam's Sons, 1897. Pp. xii–309.

Anatomical Lectures Diagrams. London: John Bale, Sons, and Danielsson, Ltd., 1897. [Price, 2*s.* 6*d.*; mounted on linen, 5*s.*]

Suite de monographies cliniques sur les questions nouvelles en médecine, en chirurgie, en biologie. No. 4. L'Hérédité normale et pathologique. Par Ch. Debierre, Professeur d'anatomie à l'Université de Lille. Pp. 40. No. 5. L'Alcoolisme. Par A. Jaquet, Privat Docent à l'Université de Bâle. Pp. 40. Paris: Masson et Cie., 1897. [Chaque monographie séparément 1 fr. 25.] [L'Œuvre médico-chirurgicale, Dr. Critzman, Directeur.]

Atlas der Syphilis und syphilisähnlichen Hautkrankheiten für Studirende und Aerzte. Von Dr. med. Martin Chotzen, Spezialarzt für Hautkrankheiten in Breslau. Heft III. Heft IV. Hamburg and Leipzig: Leopold Voss, 1897.

Proceedings of the Seventh Annual Meeting of the Association of Military Surgeons of the United States. Held in Columbus, Ohio, May 25th, 26th, and 27th.

Thirty-third Report of the Trustees of the Boston City Hospital, with Report of the Superintendent, the Medical and Surgical Statistics, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, Rules for the Convalescent Home, etc. For the Year February 1, 1896, to January 31, 1897, inclusive.

United States Department of Agriculture. Farmer's Bulletin No. 63. The Care of Milk on the Farm. No. 64. Ducks and Geese; Standard Breeds and Management.

The Relation of Chronic Nasal Inflammation to So-called Nervous Prostration; or the Result of Excesses. By Thomas F. Rumbold, M. D.

Biographical Sketch of Dr. Thomas Frazier Rumbold. [Reprinted from *Physicians and Surgeons of America.*]

Respiratory Paralysis from Hæmorrhage around the Medulla. By S. D. Hopkins, M. D., of Denver. [Reprinted from the *Colorado Medical Journal.*]

Nervous Disorders simulating Peritonitis. By S. D. Hopkins, M. D. [Reprinted from the *Colorado Medical Journal.*]

A Case of Hysteria simulating Organic Disease of the Brain. By S. D. Hopkins, M. D. [Reprinted from the *Medical Fortnightly.*]

Primary Sarcoma of the Iris. A Statistical Study, with the Report of an Additional Case, in which the Growth was successfully removed by Iridectomy. By Clarence A. Veasey, M. D., of Philadelphia. [Reprinted from the *Annals of Ophthalmology.*]

Hæmorrhagic Glaucoma. A Report of a Case, with Micro-photographs. By E. C. Ellett, M. D., of Memphis, Tenn. [Reprinted from the *Annals of Ophthalmology.*]

Digestion Leucocytosis as an Aid in Diagnosis of Cancer of the Stomach. By J. A. Capps, M. D., of Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

A Report of a Severe Case of Dermatitis Herpetiformis, presenting many of the Features of Impetigo Herpetiformis. By John A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

The Value of Modified Cow's Milk in Infant Feeding. By David James Evans, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

An Obscure Case of Purpura Hæmorrhagica with Infection by the Bacillus Aerogenes Capsulatus. By W. F. Hamilton, M. D., and H. B. Yates, M. D., of

Montreal. [Reprinted from the *Montreal Medical Journal.*]

Biennial Report of the Department of Health of the City of Chicago, for the Years 1895 and 1896.

Report of the Commissioner of Education for the Year 1895 to 1896. Volume II, containing Part II.

Transactions of the American Orthopædic Association. Eleventh Session, held in Washington, D. C., May 4, 5, and 6, 1897. Volume X.

Miscellany.

The Abortive Treatment of Influenza with Calomel.—According to the *Presse médicale,* this treatment, which is recommended by Felsenthal, is very simple and consists in the systematic administration of calomel (*Revue médicale,* December 8th). An experience during the first epidemic of influenza showed notably that calomel administered before the third day after the onset of the disease cut it short and checked the appearance of the ordinary complications of epidemic influenza.

The treatment is carried out by Felsenthal in the following manner: In all cases in which he sees the patient before the third day after the onset of the disease he begins by giving calomel; three grains in two doses to men, two grains and a half in three doses to women, and to children fifteen one-hundredths of a grain for every year of their age.

A very rapid amelioration follows the administration of this drug. From six to ten hours afterward the very high temperature falls, the cephalalgia and the pains in the back diminish or completely disappear, the cough ceases, convalescence takes place, and the patient is completely cured, more frequently at the end of two or three days. There remains only a slight anorexia which is easily overcome by the administration of some bitters.

In the large majority of cases the calomel is sufficient to bring about recovery. In certain cases, as adjuvants only, Felsenthal employs moist bandages around the thorax if there is not a decided fall of the fever; analgetics, such as antipyrine and phenacetine, if the pains persist; and sodium iodide if inflammatory symptoms pertaining to the respiratory tract exist. To men Felsenthal is in the habit of giving, at the same time with the calomel, hot whisky or hot wine, in order to provoke abundant sweating.

The Marine-Hospital Service.—In the *Annual Report of the Secretary of the Treasury on the State of the Finances for the Year 1897* that officer says:

"The Marine-Hospital Service has entered upon the centennial year of its existence, having been established in 1798. During the fiscal year ended June 30, 1897, the total number of patients treated at the hospitals and dispensaries of this service was 54,477, of which number 12,154 were treated in hospital and 42,323 as outpatients.

"Professional aid was given to other branches of the government service, as follows: To the Life-Saving Service, Steamboat-Inspection Service, Revenue-Cutter Service, and the Immigration Service.

"The total available amount of the Marine-Hospital fund during the year 1897 was $794,071.10; expenditures were $538,356.68, leaving a balance on hand of $255,714.42.

"There was a balance of the appropriation for the prevention of the spread of epidemic diseases at the end of the fiscal year of $474,674.86, but in the operations of the service in connection with the prevalence of the yellow fever in the South this balance will be materially reduced.

"Special attention has been given during the year to investigations of the great epidemic diseases of cholera, small-pox, plague, and yellow fever. The surgeon-general calls attention to the fact that the appearance of cholera in Japan and China is now a matter of greater moment to the United States than at any previous time, owing to the rapid growth of commerce between those countries and the Pacific coast. The prevalence of the bubonic plague in the eastern hemisphere has also for the same reason afforded a new problem for our health authorities. During the year, in addition to the investigation of the ports of China and Japan by a regular officer of the service, inspectors were stationed at Rio de Janerio, Habana, Santiago de Cuba, Colon, and Panama, and in Yokohama, Japan.

"Leprosy has been the subject of special investigation. The surgeon-general recommends, in view of the fact that our knowledge of the prevalence of the disease in the United States is fragmentary and unsatisfactory, although it is positively known that the number afflicted is not inconsiderable, that definite knowledge as to its prevalence and the sanitary measures adopted by State and municipal authorities be obtained through investigation by the Marine-Hospital Service; the result of this investigation to be made known to Congress, with such recommendations as may be deemed proper concerning the establishment of a national leper sanitarium. It is proposed to pay the necessary expenses of the investigation from the epidemic fund.

"Attention is called to the continued menace to the United States caused by the yellow fever in Cuba. The surgeon-general believes that the investigation now being made will show that the recent epidemic of yellow fever in the South may be traced to Cuba as its source.

"August 20th, members of the State board of health of Louisiana visited Ocean Springs to investigate the nature of a fever which had been prevailing there some time, about four hundred cases having been reported. Three days later they declared the disease dengue. September 4th, the disease was declared to be yellow fever by Passed Assistant Surgeon Wasdin, together with the State health officer of Alabama and the chairman of the city board of health of Mobile. The disease soon thereafter appeared in New Orleans and Mobile and several of the smaller cities upon the Gulf coast, and the southern half of the State of Mississippi; later, in Montgomery, Selma, Flomaton, and several minor places in Alabama; in Galveston and Houston, Texas, and in Memphis, Tennessee. The total number of cases officially reported to November 10th was 4,198, and the total number of deaths 423. The disease was widely prevalent in the city of New Orleans, the report being 1,722 cases with 244 deaths to November 10th. So energetic were the measures taken in many of the places where the disease appeared that but few cases were developed, and the mortality was light.

"The operations of the Marine-Hospital Service were conducted by experienced officers placed in charge of specified districts, who, in turn, employed medical and other assistants and used all possible means to suppress and prevent the spread of the disease. Infected localities were isolated as far as possible; trains leaving infected districts were under medical supervision; mails, baggage, and freight were disinfected, and three detention camps were erected and conducted by the service—one for Mobile, at Mount Vernon Barracks; another for the Gulf coast, at Fontainebleau, Mississippi, and the third one at Avondale, in Louisiana. Sanitary experts were also employed to report on suspected cases and to keep the bureau informed. Inspection stations were established for vessels going up the Mississippi River from New Orleans, and the efforts to prevent the infection of the Mississippi valley were successful.

"The surgeon-general states that there is little doubt but that the work that was done had a marked effect in controlling the spread of the disease and in preventing a much more extensive epidemic. The disease has now almost disappeared, and measures are being taken to carry out a system of post-epidemic disinfection of rooms and houses where the fever has prevailed.

"By direction of the president, two skilled bacteriologists of the service have been specially detailed to investigate in the city of Habana the cause of yellow fever, and it is intended to retain them in that city for the length of time necessary to obtain practical results.

"The surgeon-general reports that the eleven national quarantine stations have been efficiently conducted throughout the year. Infected vessels have been received at all of the stations, and their treatment has been conducted without undue detention.

"The surgeon-general reports the necessity for a strictly national quarantine law, to which attention has been called in previous reports. In his report for 1896 there were shown the unequal benefits and at the same time the danger involved in the operations of the present quarantine law, that of February 15, 1893, which permits State and local quarantines to be conducted under their own rules and regulations, provided, in the opinion of the secretary, additional rules and regulations are not required. The surgeon-general maintains that the national quarantine regulations should be made paramount. He states that under the provision of the law which requires him to aid in the execution and enforcement of State and local quarantine regulations claim has frequently been made by local authorities that this is the chief intent of the law, and that however absurd and unnecessary local quarantine regulations may be, the Marine-Hospital Service is bound to aid in the enforcement of them. He recommends that the law of 1893 be amended, so that its effect shall be to make national quarantine regulations paramount and to prevent interference with their enforcement by any State or local legislation. This feature of the law should apply to both maritime and interstate quarantine. Its necessity with regard to maritime quarantine has been amply demonstrated, as shown in previous annual reports. With regard to interstate quarantine, its necessity has been forcibly revealed during the recent epidemic of yellow fever in the South, when local quarantine authorities placed restrictions which not only paralyzed commerce, but prevented the exercise of their full duties by the officers of the government in their efforts to prevent the disease spreading from one section to another. It is suggested that the law should be so framed that it will be within the province of the secretary of the treasury promptly to establish a quarantine station without regard to the State or local quarantine at whatever points and at any time that he may deem it necessary for the public safety to take such action.

"The surgeon-general calls attention to the necessity for enlarging the laboratory and providing a separate building for the same. I concur in his recommendation that an appropriation of twenty-five thousand dollars be made for this purpose. I also concur in the recommendation that a commission of medical officers of the Marine-Hospital Service be authorized by act of Congress to investigate the sources of pollution of streams and other water supplies of towns and cities where pollution affects the people of more than one State."

Senator Caffery's bill to amend the act of 1893, granting additional quarantine powers to the Marine-Hospital Service and imposing additional duties upon that service, now before the Senate committee on public health and national quarantine, is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," approved February fifteenth, eighteen hundred and ninety-three, be amended by striking out the following words in section one: "And with such rules and regulations of State and municipal health authorities as may be made in pursuance of or consistent with this act," and striking out section three and inserting the following in the place of said section:

"SECTION 3. That immediately after the passage of this act the secretary of the treasury shall make such rules and regulations as are necessary to prevent the introduction into the United States of any infectious or contagious disease from any foreign port or place, or the spread of such disease from one domestic port to another, and such necessary rules and regulations as shall be observed by vessels or vehicles departing from foreign ports or places for ports or places in the United States to secure the best sanitary condition of such vessels or vehicles, their cargoes, passengers, and crews, which rules and regulations shall be published and communicated to and enforced by consular, quarantine, and customs officers of the United States and the State and local quarantine officers of the United States. All rules and regulations made by the secretary of the treasury shall operate uniformly, so far as climatic conditions will justify, in the interest of security against the introduction or spread of said infectious and contagious diseases, and shall not discriminate against any port or place. None of the penalties herein imposed shall attach to any vessel from a foreign port, or owner or officer thereof, until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul or other consular officer of the United States for ten days in the port from which said vessel sailed, and the certificate of such consul or consular officer, over his official signature, shall be competent evidence of such posting in any court of the United States. Nor shall the penalties imposed by this act attach to any common carrier or officer, agent or employee of any common carrier crossing the border of the United States until a copy of this act, with the rules and regulations made in pursuance thereof, has been published and made publicly known.

"At any port or place in the United States where the secretary of the treasury shall deem it necessary for the prevention of the introduction of contagious or infectious disease from a foreign port or place that incoming vessels, vehicles, or persons shall be inspected by a national quarantine officer, such officer shall be designated or appointed by the secretary of the treasury, on recommendation of the surgeon-general of the Marine-Hospital Service, and at any such port or place no vessel, vehicle, or person from a foreign port or place shall be admitted to entry or enter without the certificate of said officer that the United States quarantine regulations have been complied with.

"Any vessel sailing from any foreign port without a United States consular bill of health, and arriving within the limits of any collection district of the United States, and not entering or attempting to enter any port of the United States, shall be subject to such quarantine measures as shall be prescribed by regulations of the secretary of the treasury, and the cost of such measures shall be a lien on said vessel, to be recovered by proceedings in the proper district court of the United States and in the manner set forth above as regards vessels from foreign ports without bills of health and entering any port of the United States.

"National quarantine stations now in operation shall be conducted in accordance with the provisions of this act, and the supervising surgeon-general, with the approval of the secretary of the treasury, is authorized to designate and mark the boundaries of the quarantine grounds and quarantine anchorages for vessels, which are reserved for use at each United States quarantine station; and any vessel, or officer of any vessel, or other person, trespassing upon such grounds or anchorages, in disregard of the quarantine rules and regulations, shall be deemed guilty of a misdemeanor and subject to arrest, and, upon conviction thereof, be punished by a fine of not more than three hundred dollars, or imprisonment for not more than one year, or both, in the discretion of the court.

"And any master or owner of any vessel, or any person violating any rule or regulation made in accordance with this act, relating to inspection of vessels, or relating to the prevention of the introduction of contagious or infectious disease, and any master, owner, or agent of any vessel making a false statement relative to the sanitary condition of said vessel or its contents, or as to the health of any passenger or person thereon, shall be deemed guilty of a misdemeanor and subject to arrest, and, upon conviction thereof, be punished by a fine of not more than five hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court.

"Medical officers of the United States, duly clothed with authority to act as quarantine officers at any port or place within the United States, and when performing such duties, are hereby authorized to take declarations and administer oaths in matters pertaining to the administration of the quarantine laws and regulations of the United States.

"The secretary of the treasury shall, whenever in his judgment it is necessary, make rules and regulations to prevent the introduction of infectious or contagious diseases into one State or Territory, or the District of Columbia, from another State, Territory, or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the secretary of the treasury and enforced by the sanitary authorities of the States and municipalities when the State or municipal authorities will undertake to execute or enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations, or other rules or regulations made under the provisions of this act, the president shall execute and enforce the same, and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

"Whenever yellow fever, cholera, plague, or typhus fever has passed the quarantines of the United States, or in any manner any one of these diseases has gained entrance or has appeared within the limits of any State, Territory, or the District of Columbia, the quarantine regulations of the United States, prepared under the direction of the secretary of the treasury, shall be supreme and have precedence of State or municipal quarantine laws, rules, or regulations, and the president is authorized to enforce the same within the limits of any State, Territory, or the District of Columbia, and to control the movement of vessels, railway trains, vehicles, or persons within any State, Territory, or the District of Columbia, to prevent these diseases from spreading from one State, Territory, or the District of Columbia, to another State, Territory, or the District of Columbia, and to prevent unnecessary restrictions upon interstate commerce; and whenever, in accordance with the rules and regulations made as herein authorized to prohibit or permit the movement of vessels, railway trains, and vehicles, or transportation of persons, prohibitions or permits have been made or granted, any person violating said prohibition or permit shall be deemed guilty of a misdemeanor, and shall be subject to a fine of not more than one thousand dollars, or imprisonment for not more than twelve months, or both, at the discretion of the court; and any violation of said prohibition or permit shall be reported to the United States district attorney for the district in which the offense has been committed, who shall thereupon institute necessary proceedings for the recovery of the penalty herein imposed."

That section six of said act shall be amended to read as follows:

"That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same, the secretary of the treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station, where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo; and after treatment of any infected vessel, or inspection of any vessel not infected at a national quarantine station, and after certificate shall have been given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be permitted to enter and admitted to entry at any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State or local authorities, the secretary of the treasury may direct vessels bound for said ports to undergo quarantine at said State or local station."

That section eight of said act shall be amended to read as follows:

"That whenever the proper authorities of a State shall surrender to the United States the use of the buildings, grounds, and disinfecting apparatus at a State or municipal quarantine station, the secretary of the treasury shall be authorized to purchase them at a reasonable compensation, or pay a reasonable rental for their use, if in his opinion they are necessary to the

United States; and the expense of said purchase or rental is made payable from the epidemic fund."

Heredity as a Factor in the Ætiology of Insanity.—This is the subject of an article, published in the October number of the *American Journal of Insanity*, which was read at the recent meeting of the British Medical Association, in Montreal, by Dr. Henry Putnam Stearns, of Hartford. In this paper the author restricts himself to a consideration of that form of acquired character which arises from a diminution or modification of normal mental function, and his conclusions are summed up as follows:

"1. It may be affirmed that all acquired characters and changes in the physiological activities of the system, whether physical or mental, are affected primarily and essentially through influences acting on the nervous system. This is the medium through which the personality comes into relation with the external world. Irritations and influences from the environment act primarily upon it; and this, in turn, reacts upon the different organs and members of the general system. But the nervous system, comprising the brain, spinal cord, and nerves, is essentially a unit. The functions of its different parts, however, are of diverse character, and it is accordingly arranged with special reference to the functions to be performed.

"Flechsig calls attention to a distinction between that part of the sensory system of nerves which receives impressions from the external world, and that which is concerned with the functional operations of the body. It is by means of the first kind of sensations—that is, those which come through the special organs of sense and general sensation—that we first become conscious of that which is not ourselves and enter into relations with the world without. The second group of sensory nerves comprises those whose function relates to the physical instincts, such as hunger, thirst, and sexual desire. The fibres of the latter group are found to be the first to become medullated, having connections with the nerves of the cord, medulla, and probably with the internal capsule.

"Whether this view is correct, and will be verified in detail in the future, is immaterial. The particular point to which I desire to call attention is that that portion of the sensory system of nerves which has a distinct relation to the ovaries and their product is among the earliest in development, and is related to the primary instincts and profoundest activities of the organism. Provision is, therefore, early made in embryonic life for the future conveyance of radiations of organic energy from the brain to influence them.

"2. In the line of this thought Hering, as quoted by Cope, observes: 'We notice further on that the process of development of the germs which are destined to attain an independent existence exercises a powerful reaction, both on the conscious and unconscious life of the organism. And this is a hint that the organ of germination is in closer and more momentous relations to the other parts, especially to the nervous system, than any other organ. In an inverse ratio the conscious destinies of the whole organism, it is most probable, find a stronger echo in the germinal vesicles than elsewhere.'

"3. I have, in another connection, called attention to the fact that the anatomy and physiological activities of the cortical cells differ from those of other somatic cells. Each one arises in an independent, isolated form, and not from another cell, in the ordinary manner of somatic cell-multiplication. 'The cortical cell has an individual character and anatomy of its own; that its renewals do not occur by accretion or absorption from the surrounding tissues or blood-vessels directly, but from the influence of forces which act from within the cell itself; that the protoplasmic material of the interior of the cell is constantly elaborating nucleoli which in turn become nuclei, and these afterward become cells proper, so that the cell never dies except from the effects of disease. Its characteristic form, its angles, projections, and dendrites appear to be renewed from time to time, while its individual anatomy remains unchanged.'

"These are the cells upon which the influences of experience and environment, of whatever nature they may be, act primarily and directly, and no secondary character can arise in connection with any part or organ of the system, except from such influences as have first affected them, and have also been radiated by them to such part or organ.

"It follows that when the energizing capacity of these cells has become much impaired from the effects of any cause whatever, there must result some corresponding effects in those organs and the product of their function, which are under their influence and are also dependent upon it when in a normal state of activity. But Weismann claims that this influence must be 'very slight.' 'Very slight' is a very indefinite expression when used in such a connection. Be it little or much, however, it is sufficient, when the cortex is in certain conditions, to arrest the progress of menstruation, and to hold this function in a state of suspension continuously for months. If sufficient to effect this, it certainly must be sufficient to modify the infinitesimal elements of the germ plasm, which are the representatives of the characters of the future organism.

"That this organic connection between the cortex and the ovaries should be more perfect in some persons, families, and races than in others is highly probable; and, if this is the case, the fact would explain why some persons and families appear to be endowed with unusual ability in transmitting characteristics of family and race.

"It may also furnish an explanation of the way in which the tendency toward disease and other undesirable acquired characters, and also characters of an opposite nature, which may pertain to one of the parents, may become eliminated or partially overcome. From the microscopical studies of Weismann and others, it appears to be certain that some portion of the elements of the two forms of germ plasm coalesce in the formation of the future organism, and this would insure the larger measure of influence from the more vigorous element.

"Possibly it may be inferred that if the effects of a diminution in the function of the cortex may in a negative way have an effect on the ovaries and their product, the same may be true in a positive way in relation to an increase in the function of it.

"There certainly exist some reasons for such an inference. Use and a favorable environment tend to attract larger measures of organic and functional energy to the brain. We constantly witness improvement in the quality of mental function from use and discipline, and if the product of function is improved, the inference is legitimate that the physical basis of it has become more highly developed and more finely organized. Indeed, we can judge of the quality of the structure only by the character of its product.

"It is true that such acquired characters do not always appear in offspring; and with reason. Both parents rarely possess like acquired characters, and those of one parent may often wholly neutralize those of the other. Again, every one represents characters of the nervous system which are of diverse tendencies, which reach back through many generations in two families. The influence of atavistic tendencies is always operative, and leads to variety, and not uniformity, of characters."

The New York Academy of Medicine.—The annual election took place on Thursday evening, December 16th. Dr. Orlando B. Douglas was elected vice-president; Dr. Louis Faugères Bishop, recording secretary; Dr. M. Allen Starr, corresponding secretary; Dr. Henry E. Crampton, treasurer; Dr. Arthur M. Jacobus, trustee; Dr. Henry Ling Taylor, a member of the committee on admissions; and Dr. Edward D. Fisher, a member of the committee on the library.

The Treatment of Acromegaly by the Extracts of the Thyreoid and Pituitary Glands Simultaneously.—The thyreoid and pituitary glands, remarks Mr. H. D. Rolleston, in the *Lancet* for December 4th, have been thought to be compensatory to each other; recently, however, their extracts have been shown to be physiologically antagonistic. Superficially there are some resemblances between acromegaly and myxœdema, and it might be thought that acromegaly was the result of a disturbance of the chemico-physiological equilibrium maintained in health by the normal activity of these two glands. In this connection Mr. Rolleston refers to a paper on Acromegaly with Goître, etc., by Dr. G. R. Murray, who, while inclining to the view that acromegaly is in some way dependent on alteration in the function of the pituitary gland, says that the coexistence of acromegaly and exophthalmic goître suggests that there may be some common cause which brings about similar changes in both the thyreoid and the pituitary glands, each in turn producing its attendant symptoms. Such a consideration, says the author, suggests that acromegaly might be benefited by giving the pituitary and thyreoid extracts at the same time.

He states that he has been able to test this theoretical consideration in two cases of acromegaly in which the pressing symptom complained of—headache—was relieved by taking twice a day a five-grain tabloid of thyreoid and pituitary extract. The skeletal changes, however, remained unaffected, and the amenorrhœa, from which both patients suffered, remained. The details of the first case are as follows: The patient, who was thirty-five years old, had been suffering since 1891, but it was not until 1894 that definite symptoms of acromegaly began to appear. Her hands and feet began to enlarge, and her sight began to fail. She had optic atrophy and transient glycosuria. After being treated in the hospital in February, 1896, she went home and was under the care of Dr. Hollis, of Wellingborough. Toward the end of that year the headache became so intense that she was anxious to undergo any operation that would relieve it. She came under the author's care, and, after consultation, it was decided that no attempt to remove the pituitary body, which from the primary atrophy of the optic nerves was probably much enlarged, was justifiable, but that, if the pain continued, the skull might be trephined and the subdural space opened with the object of relieving intracranial pressure. She was given the combined thyreoid and pituitary extracts, and she gradually lost the headache and was able to get up. The improvement keeping up, she was allowed to go back to her home in March, 1897, and directed to continue the treatment. This advice, however, she did not follow, and in the month of June epileptoid fits appeared accompanied by loss of consciousness. She gradually grew weaker and died on August 16th. Fourteen hours after her death the author made an examination and found that the pituitary body was greatly enlarged by a soft white growth which had invaded the right optic thalamus and, microscopically, had the structure of a medium-sized round-celled sarcoma. The thymus was persistent and, microscopically, showed marked enlargement of the concentric corpuscles of Hassall. The thyreoid body was healthy both to the naked eye and microscopically.

In the second case, which was a less advanced one, no changes in the optic nerves being present, the patient had had severe headache for six weeks before she came under the author's observation, in October, 1896. The combined extracts of the thyreoid and the pituitary glands were administered, and she soon lost the headache. She subsequently attended as an out-patient of the hospital until July, 1897, the same treatment being continued. As there was no return of the headache when she was an out-patient, says the author, its disappearance can hardly be explained as being merely due to rest and improved physical conditions.

The author thinks that the results in these two cases are too scanty to establish any reliable conclusion as to the value of the treatment, but he thinks they justify a more extended trial. One point, he remarks, that specially requires investigation is whether any good effect that may result from the administration of the combined extracts is solely due to the contained thyreoid extract or whether the two combined extracts have more effect than the administration of thyreoid alone. Pituitary extract has been generally unsuccessful in the treatment of acromegaly while the treatment with thyreoid extract has given variable results. Mr. Rolleston refers to Benson, Bruns, and Bramwell who record improvement, to Bramwell and Ransom who report no effect, and to Murray who mentions temporary improvement which disappeared while the treatment was continued. Under these circumstances, he says, it has been thought that any beneficial effects it may have are of a general nature and not due to any specific action on the morbid processes at work in acromegaly. But since thyreoid extract has been found to relieve the headache of acromegaly, it is possible, he thinks, that the apparent success of the administration of the combined extracts was in reality due to the thyreoid extract and not to the combination. In this connection it would be interesting to ascertain what is the effect of thyreoid extract on headache other than that of acromegaly; from the fact that it lowers external pressure it might be expected to relieve some forms of headache. In the Report of the Clinical Society of London on Myxœdema occipital headache was present in a fifth of the cases. On the other hand, excessive doses of the extract give rise among other symptoms to headache.

At the present time, continues the author, the relation of changes in the pituitary gland to acromegaly can not be considered as entirely understood or definitely settled; it is true that the change in the gland is generally regarded as primary. But it may be that they are both the manifestations of some primary change elsewhere, or, as the occasional association of acromegaly with some or in very rare cases with all the symptoms of exophthalmic goître on the one hand and the superficial resemblance to myxœdema on the other suggests, the symptoms of the disease may be due to some disturbance of a theoretical equilibrium which in health is maintained between the internal secretions of the thyreoid and pituitary glands. In this state of the question the results of more extended therapeutical trial of thyreoid extract, both alone and in combination with pituitary extract, might be of considerable value.

Some Phenomena in Inebriety.—The October number of the *Alienist and Neurologist* contains an editorial in which the writer discusses an article entitled Some Unknown Phenomena in Intoxication, by Dr. T. D. Crothers, recently published in the *Journal of Inebriety.* He takes exception to certain statements made by Dr. Crothers—for instance, "Acute alcoholic intoxication is *always* marked by general palsy of the senses and reasoning." This, says the writer, is often true in the neuropathic, but some of the world's best work in every walk of life, even in poetry and in the pulpit, has been executed under acute alcoholic poisoning. Again, Dr. Crothers says: "At the first, *delusional egotism, with delirium of suspicion* and [in]credulity, and general confusion of thought are present. Then an increasing confusion and mental enfeeblement, also a general lowering of all emotional and functional activities. The reasoning is obscure and deranged, certain ideas may fill the mind to the exclusion of all others, together with mental instability of thought, such as changing suddenly from one topic to another, are present. *In all cases,* degrees of dementia, with profound and progressive palsy, are the marked symptoms. These are so prominent and common to all cases that no one doubts the insanity and imbecility of an intoxicated person."

Dr. Crothers, continues the writer, sees the phenomena of inebriety as it shows itself in the chronic inebriates of his institution correctly enough, but his generalization and deductions as applied to all drinkers outside of Walnut Lodge are extremely faulty and often very erroneous. *In vino veritas* is nearer the psychological and psychiatric rule. Liquor brings out the true latent nature of the man, normal or morbid. In the exhilarant stage it shows psychical exaltation and exhilaration in the line of the normal mental action of the individual. In the neuropathic it brings into morbid activity latent psychiatric tendencies and reveals neurotic perversions—delusions of suspicion, exaltation, and strength, impulses to violence, perverted and imperative morbid conceptions, etc. In the final stage of overwhelming alcoholic poisoning all inebriated are alike, the ending coma of all is the same.

This is not a true psychical picture of *all* intoxicated persons, the writer continues, and will not be accepted as such by the expert alienist and neurologist, whose clinical observation embraces the normal as well as the abnormal psycho-neural mechanism under alcoholic excitation and toxæmia. There are many psychoneural organizations, he says, which, under alcohol, can not be caused to present the symptom-complex above described, but only reveal preliminary excitation in the line of exalted normal mental activity and subsequent stupidity and stupor and sometimes coma.

Alcohol, says the writer, is a good test of inherent neural stability. The inherently neurotically unstable succumb soon to its influence and act unnaturally. While in moderate quantities short of overwhelming coma-inducing toxicity, it exalts intellectual function in the normally endowed in the earlier stages of its influence. Dr. Crothers, the writer says, has caught a glimpse of this fact, as shown in the following statement:

In a certain number of persons in this condition there have been noticed sane moments and intelligent reasoning, with clearness of judgment and perception equal, if not superior, to the highest brain activity in its normal state. In a semicomatose state, the mind will suddenly display a degree of wisdom and sanity in some opinion or advice, then sink back into its *demented condition.*

The writer considers the term demented condition an unfortunate one as applied to this toxic alcoholic somnolency. There is, he says, no dementia or coma in it. It is simply the somnolent stupor of alcoholic intoxication to which the brain of a normally endowed and stable neural organism is superior under the stimulus of a proper external mental excitation. Daniel Webster, drunk, but volitionally urged to the effort, says the writer, threw off the incubus of alcohol and astonished listening thousands, who were swayed by the eloquence of an alcoholized but neurally normal brain, the alcohol impulsion upon the healthy neurones of whose well-endowed intellectual centres acted as the whip and spur of action. It is only when the integrity of the neurone is impaired, either by hereditarily transmitted or neuropathically acquired conditions, or after the neuropathic sequences of long-continued and excessive alcoholic toxæmia appear, that the symptomatic expressions described by Dr. Crothers may be seen. He describes psycho-neuropathia, plus alcoholic poisoning, and mingles normal with abnormal nerve-cell response to alcohol in the blood.

We should be careful, the writer continues, how we do this; because medical men who see much of the effects of alcohol in homes for the inebriate are likely to be regarded as neurological experts in questions of inebriety and may be asked to enlighten courts and juries on the subject, and few things in human nature vary more than the response of the neurally stable and the neurally unstable to alcohol in the blood in a quantity short of overwhelming poison. Not all persons under the influence of alcohol are either insane or fools. Within certain limits alcohol is a test of neural stability and a proof of neuropathic instability.

The Enteritis of Infancy and the Varieties of Bacteria Coli.—At a recent meeting of the Société de biologie, a report of which appears in the December number of the *Revue mensuelle des maladies de l'enfance,* M. Lesage presented the following *résumé* of his researches in regard to the agglutinant substance observed in the course of infections due to the *Bacillus coli:* 1. The bacteria coli from a child in the acute stage of the disease were agglutinated by the serum of the same child; in forty cases the results were positive and in ten cases negative. The reaction, although not constant, was, however, very frequent. Out of the ten negative cases, the bacteria coli were, nevertheless, virulent in eight. 2. In the cases with the positive results the serum of the forty children agglutinated thirty-nine specimens of bacteria coli from thirty-nine other children suffering from the same disease. 3. It might be that in the negative cases the reaction had not yet appeared, for when the facts of the forty positive cases were examined in detail it was seen that thirteen times the agglutination had been absent at the first examination and had appeared on the following days. 4. The duration of the reaction was short, in spite of the persistence of the digestive condition; for, if the disease passed to the chronic stage, the agglutination disappeared after a few days. 5. Also, when an examination was made of a child suffering from chronic enteritis or athrepsia, the reaction was found to be absent; this occurred in twenty-four cases out of twenty-five. However, occasionally it might appear if there was an intestinal attack, but it was of short duration and very feeble; this was ascertained in six cases out of twenty-five. The physical agglutinant reaction was the indication of a reaction of the organism against the acute intoxication. If the intoxication persisted, the organism lost this property of reacting, and the prognosis became grave. 6. This agglutinant reaction seemed to be directed to the intoxication, for with a good toxine secreted by these bacteria coli a horse was immunized and a peculiar serum obtained which agglutinated all the forty specimens of bacteria coli and ninety-three of bacteria coli coming from a hundred and thirteen children attacked with the same disease. This serum was purely antitoxic. Besides, if with the malign toxines coming from the same cultures serums were to be made they would have no agglutinant property. So that with the aid of this reaction it could be seen whether a serum was good or bad. 7. This reaction was independent of the immunizing reaction, for the serum might, during the course of the immunization of the animal, possess the agglutinant property, and yet not have acquired the property of immunization. 8. If, at the autopsy of children who had died from athrepsia, in whom the reaction had been absent during life, the agglutination in the various organs was sought for, it would not be found except in the liver. It might be thought that the substance was produced in this organ, and not distributed through the blood unless there was a rather large quantity. This would be an antitoxic reaction of the hepatic cell. What confirmed the author in his opinion was that, in children who had died during the acute stage of the disease, in whom the reaction had been present a few days before, it had not been found at all at the autopsy except in the liver. 9. From all these facts we could conclude that all the bacteria coli of the enteritis of nurslings belonged to one very peculiar variety, inasmuch as the normal bacteria coli, at this age, were not agglutinated by the serum of sick children, that the normal serum did not agglutinate the infectious bacteria coli, and that the normal serum did not agglutinate the normal bacteria coli. 10. The serum of typhoid fever did not agglutinate the normal bacteria coli or the bacteria coli of the enteritis of nurslings. 11. The different varieties of bacteria coli in adults were not agglutinated by the serum of sick children or by the antitoxic serum of the immunized horse. 12. It was important, then, to study in a methodical manner the different varieties of bacteria coli. 13. Among these varieties of bacteria coli of the enteritis of infancy that were agglutinated by their antitoxic serum, some coagulated milk, others did not; some gave indol, others did not; and some of them yielded to the method of Achard and Renaut, so much so that agglutination seemed to the author to be a much more important and more certain means of diagnosis of the variety than the various chemical reactions.

The Abuse of Medical Charity in Boston.—The following resolutions were adopted at a meeting of the Boston Medical Society held on December 18th:

Whereas, the unrestricted abuse of medical charity in the large hospitals and dispensaries of Boston is being seriously complained of by a large number of general practitioners; and,

Whereas, the State has granted charters to these hospitals and dispensaries for the definite purpose of giving medical and surgical care and treatment to indigent persons within this city and Commonwealth; and,

Whereas, the Boston Medical Society individually and collectively recognize, with every feeling of sympathy, the rights and just claims of some of our citizens to the benefits of public and private charity, and will not be found wanting in generosity in whatever may tend to foster the moral, social, and physical well-being of the sick, the poor, the destitute, the lowly, the worthy, and the unfortunate; and,

Whereas, large numbers of persons, of both sexes, frequently, daily, and repeatedly receive medical and surgical advice and treatment gratuitously, for numerous cases of minor surgery and ordinary illness, who are believed to be financially competent to pay moderate fees; and,

Whereas, the time, facilities, and attention at the dispensaries being necessarily limited, that which is received by the well-to-do and the undeserving is, in that proportion, withheld from those who, by chartered rules of those institutions, are justly entitled to their benefits; and,

Whereas, the practitioners of medicine and surgery of any community who have duly graduated from accredited medical colleges, and have incurred the expense of locating in such communities, naturally and justly feel that their present and prospective rights and privileges are wrongly encroached upon by the abuses now in practice in connection with medical charities. Therefore, be it

Resolved, that it is the opinion of this society that some means can be found to check or modify this formidable evil; and

Resolved, that an urgent call be made upon all such members of the profession who are in sympathy with this movement and have at heart the best interests of the medical profession to render such moral assistance and financial support in the adoption of such measures as will tend to eradicate and prevent these evils, abuses, and practices; and

Resolved, that an open meeting be held at some future time and the profession at large be invited to be present; and

Resolved, that a copy of these resolutions be sent to the *Boston Medical and Surgical Journal,* the *Journal of the American Medical Association,* the *Medical Record,* the *New York Medical Journal,* and the *Medical News* for publication.

[Signed for the society.]

M. Gerstein, M. D., *Secretary.*

1038 Washington Street.

[Dr. Gerstein informs us that the open meeting mentioned in the resolutions is to be held on Saturday, January 1st.]

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EDITED BY
FRANK P. FOSTER, M.D.

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